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Federal Budget Deficits and the U.S. Economy

A Summary of the Proceedings of The Conference Board's Economic Policy Forum, with Background Papers

by Michael E. Levy et al

A Conference Report from The Conference Board

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Why This Report

On November 28, 1983, The Conference Board convened an exceptionally able group of economists to share their views on the meaning and significance of the federal budget deficits projected through the 1980's by the Office of Management and Budget (OMB), the Congressional Budget Office (CBO), and many independent experts. The participants represented a broad range of backgrounds and affiliations—including OMB, CBO, the Treasury Department, the Federal Reserve, and the private sector—but they were invited first and foremost because of their professional expertise on the issues under review.

Each participant wrote a background paper in preparation for this meeting. The subject matter for each was selected by the authors in consultation with Michael E. Levy, the Director of The Conference Board's first Economic Policy Forum. These papers were designed to cover a broad range of issues relating the large "structural" budget deficits to the future performance of the U.S. economy, while drawing on the particular expertise and unique resources of the participants. They contain valuable information and insights that deserve broad distribution and hence they are included in this report.

The opening essay by Michael E. Levy, Director of The Conference Board's Economic Policy Research, summarizes the issues raised at this Forum and the most pertinent responses that evolved from the lively debates among members of the group. Dr. Levy also drew on the background papers to amplify some of the issues discussed orally and to provide additional support for conclusions reached in the deliberations.

The Conference Board is deeply indebted to the distinguished members of the profession who served as the authors and discussants at the Board's first Economic Policy Forum. Douglas R. Cliggott, Associate Economist, assisted Dr. Levy with the planning of this Forum and the coordination of the essays included in this publication.

JAMES T. MILLS
President

Federal Budget Deficits and The U.S. Economy

A Summary of The Proceedings of The Conference Board's Economic Policy Forum

by Michael E. Levy
Director, Economic Policy Research
The Conference Board

IN RECENT YEARS, there has been growing concern among policymakers, financial market experts, and economists that large and rising structural budget deficits may impair national and international economic growth and prevent the return to durable price stability. There are at least four interrelated reasons for this heightened concern.

First, the budget deficit for fiscal 1983, at $195.4 billion or 6.1 percent of GNP, was by far the largest deficit of the post-World War II period in absolute as well as in relative size. The somewhat lower fiscal 1984 budget deficit (now expected to be in the $175-$185 billion range, or about 5 percent of GNP) will still be the second largest—by a wide margin—in this period.

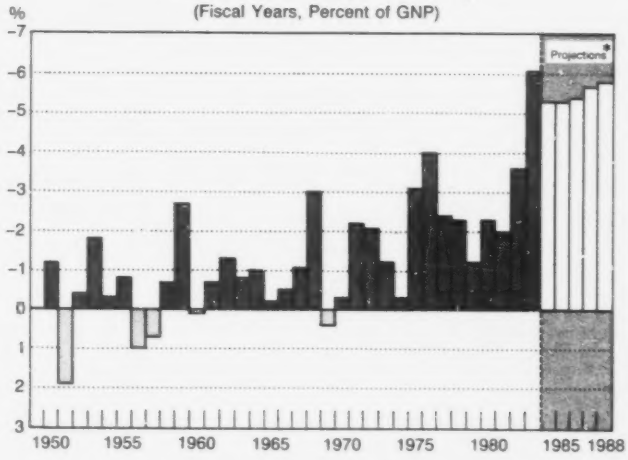
Second, while the huge fiscal 1983 budget deficit was affected significantly by the severe 1981-1982 recession—the first quarter of fiscal 1983 coincided with the last quarter of that recession—the large 1984 deficit is occurring in the second year of a vigorous economic recovery, when federal budget deficits typically decline sharply. Another large deficit—equal to about 4.5 percent of GNP—is now projected for fiscal 1985, even under conditions of continued strong real growth.

By contrast, there were only two "oversized" budget deficits during the 1950's and 1960's. The fiscal 1959 deficit, equal to 2.7 percent of GNP, was associated with the 1957-1958 recession; and the fiscal 1968 deficit, equal to 3 percent of GNP, reflected the unanticipated large defense buildup at the height of the Vietnam War. Each of these deficits was followed immediately by a budget *surplus* in the next fiscal year. Even during the 1970's—a period of more persistent and larger average deficits—the largest "oversized" budget deficit of 4 percent (in fiscal 1976) was sharply reduced within one year to 2.4 percent of GNP. (For details, see chart on this page.)

Third, beginning with fiscal 1983, large budget deficits have become endemic to the fiscal structure of the Federal Government (see chart on page 3). Large increases in defense outlays and in interest cost on the rapidly rising federal debt, combined with the potential revenue loss from a tax structure reshaped by the 1981-1985 "supply-side" tax cuts, contribute to the result. Budget deficits in excess of 4 percent of GNP are now projected for the next several years, even under the most favorable economic assumptions of vigorous and uninterrupted economic growth with reduced unemployment. In previous years, rapid growth would have sharply reduced such deficits in absolute dollar terms, and even more so as a proportion of GNP. By contrast, the projected deficits remain historically high even as a proportion of GNP.

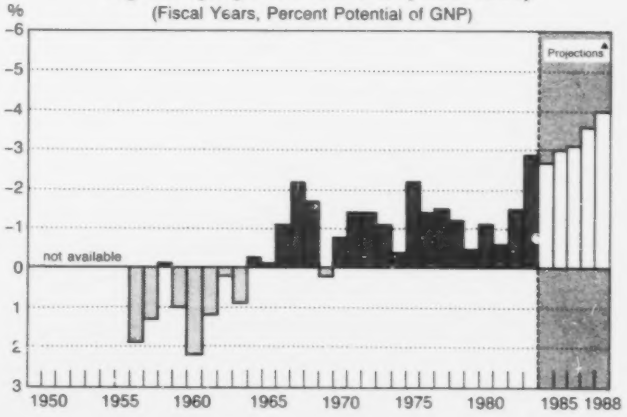
Actual Deficits (1950–1988)

(Fiscal Years, Percent of GNP)



High Employment Deficits (1950–1988)

(Fiscal Years, Percent Potential of GNP)



*Taken from Van Dorn Ooms, "Growth in the Deficits and the Structure of the Budget", Table 1, page 9.

▲Based on the taxing and spending policies in place for fiscal 1983.

Sources: Congressional Budget Office; House Budget Committee; Office of Management and Budget and The Conference Board.

Measuring "Structural" Budget Surpluses or Deficits

The concept of the "full-employment budget surplus" as a measure of government saving (or, in the case of a deficit, of dissaving) at full employment is rooted in Keynesian full-employment analyses of the 1930's. The first specific applications of the full-employment surplus by Milton Friedman and by the Committee for Economic Development occurred during the early post-World War II period. Systematic empirical estimates and regular analytical applications of this concept as a measure of the "structural stimulation" (or restraint) of the federal budget got under way during the early 1960's.[1]

The first major subsequent refinements in concept and measurement were provided by Arthur M. Okun and Nancy Teaters in 1970.[2] In the 1970's, use of the full-employment surplus faded away, as high and accelerating inflation and rising unemployment greatly reduced the reliability of the empirical estimates and the analytical significance of this concept.

In 1980, a group of government economists developed important refinements in estimating procedures and produced a series of revised estimates for 1955-1980 of what was not being called the "high-employment" budget surplus (or deficit).[3] A further refinement consisted of estimating the automatic inflation effects on the high-employment budget.[4]

Recently, the Department of Commerce has developed a new "structural" measure of the federal budget by estimating budget receipts, expenditures and deficits at "trend levels" of GNP that were derived by connecting real GNP averages in the middle periods of the economic expansions.[5] These "middle-expansion trend" estimates may be considered more readily attainable or more "representative" than "high-employment" estimates, particularly for recent years when the U.S. economy consistently failed to approach high employment.

[1]For a review of the early estimating procedures and analytical uses, as well as bibliographical references, see Michael E. Levy, *Fiscal Policy, Cycles and Growth*, The Conference Board, New York: 1963.

[2]"The Full Employment Surplus Revisited," *Brookings Papers on Economic Activity*, 1970, No. 1, pp. 77-110.

[3]Frank de Leeuw, Thomas M. Holloway, Darwin G. Johnson, David S. McClain, and Charles A. Waite, "The High-Employment Budget: New Estimates, 1955-1980," U.S. Department of Commerce, *Survey of Current Business*, November 1980, pp. 13-43.

[4]Frank de Leeuw and Thomas Holloway, "The High-Employment Budget: Revised Estimates and Automatic Inflation Effects," U.S. Department of Commerce, *Survey of Current Business*, April 1982, pp. 21-33.

[5]Frank de Leeuw and Thomas M. Holloway, "Cyclical Adjustment of the Federal Budget and Federal Debt," U.S. Department of Commerce, *Survey of Current Business*, December 1983, pp. 25-40.

Fourth, the large budget deficits from this new deficit-producing fiscal structure have limited the viable options available to monetary policy, particularly in an economic environment that is still widely perceived to be inflation-prone. As the current economic expansion proceeds and private demand for funds increases, these large deficits will add pressure to the financial markets and raise interest rates. Such developments are bound to intensify national and international concern over the exceptionally high interest rates in the United States, as many of its leading trading partners perceive these rates as a major impediment to improved economic recovery abroad. High and rising U.S. interest rates also aggravate the debt-servicing difficulties of some less-developed countries that are burdened with large foreign loans and increase the risk of an international financial crisis.

These brief observations help to explain why U.S. budget deficits have become the focus of intense policy debates here and abroad. Last year, The Conference Board responded to these concerns by making "Federal Budget Deficits and the Future of the U.S. Economy" the subject of its first Economic Policy Forum.

On November 28, 1983, The Conference Board convened a distinguished panel of experts from the public and private sectors for a full day's discussion of the current fiscal imbalance, its economic implications, and an exploration of potential cures. Panelists were chosen with a view toward diversity of affiliations, points of view, and commitments. (The panelists and authors of background papers are listed on the inside back cover.)

Before the Forum met, the panelists prepared background papers on specific issues that were likely to come up for discussion. Selection and assignment of topics evolved from extensive consultations between the chairman of the Forum and the panelists. The background papers provided highly relevant factual information, explained some of the more controversial issues, and spelled out whatever generalizations or conclusions seemed warranted by the respective authors after careful examination of the best available evidence. The authors were instructed to focus on empirical and analytical explorations of the issues, in preference to writing "position papers." Neither their analyses nor their conclusions should be construed as reflecting the views or positions of the institutions with which they were affiliated.

These papers provided important background for the deliberations of the Forum. This essay is intended to summarize the Forum's proceedings. The background papers (in slightly edited and updated version) are included to provide further illumination of some of the issues.

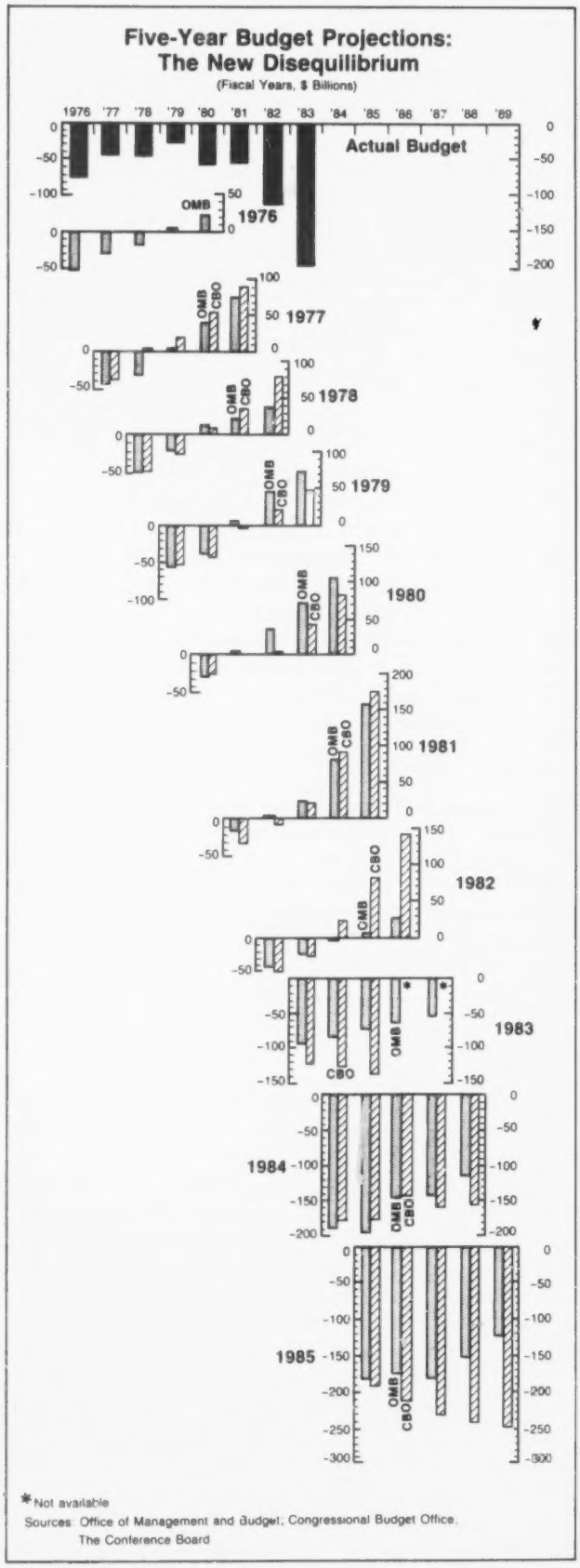
Structural Budget Deficits: Significance, Size and Scope

Any worthwhile analysis of the economic difficulties that may arise from the large budget deficits of fiscal 1983 and subsequent years must distinguish between the cyclical and the structural component of these deficits. The cyclical component simply reflects the revenue-depressing and expenditure-enhancing effects of the business cycle on the budget.

Cyclical budget deficits have long been associated with the built-in stabilizing effects of the federal budget on the economy. The deficit increases during a recession, thus cushioning the economic decline, it shrinks (or even turns into a surplus) during an expansion, thus reducing federal borrowing needs when private demand tends to rise rapidly. These countercyclical effects are generally considered beneficial.

Structural deficits, by contrast, reflect the underlying tax structure and the size, scope and design of autonomous federal spending programs; they are usually measured at a specific (cyclically calibrated) level of economic activity. In the early 1960's, when the systematic measurement and analysis of the structural budget balance was first introduced, this "cyclical calibration" was set at "full employment" (defined as a 4-percent unemployment rate). This means that for purposes of *structural analysis,* budget receipts, expenditures and deficits were all "measured" (i.e., estimated) at full employment. In fact, the commonly used measure of the budget structure came to be known as the "full-employment budget *surplus,*" because structural *surpluses* were the rule, rather than the exception, from the mid-1950's through the mid-1960's (see chart on page 1.) Subsequently, the concept underwent numerous analytical and measurement refinements. In the Forum's discussions (and several of the papers), "high-employment" concepts were used with high employment defined as 6 percent unemployment. (For additional information on the development of the concept and the measurement of "structural" surpluses and deficits, see box on preceding page.)

Ooms and Van de Water presented evidence (contained in greater detail in their respective papers) that the fiscal 1983 budget structure produced a high-employment deficit that was unusually large by historical standards—about 3 percent of GNP, compared with about 2 percent in fiscal 1980 and 1975, 0.5 percent in fiscal 1970, and a virtual balance in fiscal 1965. Moreover, projections of the 1983 budget structure produce not only high, but *rising* structural budget deficits for the mid- and late-1980's. (As a result of strong economic growth, the cyclical deficit component is projected to decline steadily during this period.) Other



indicators of a deteriorating budget structure were stressed during the discussions, such as the steadily rising debt ratio—that is, the ratio of the public debt outside the Federal Reserve to GNP.

All relevant measures reviewed by the Forum signaled an unusually large structural imbalance of the budget that would deteriorate further in subsequent years, unless corrective changes in policy were undertaken. Such corrective action could consist either of substantial reductions in existing and projected spending programs, or significant tax increases, or a combination of both. There was widespread agreement that the political and economic realities would probably require a combination of broad-based spending cuts and tax increases (see page 7).

The panelists were well aware that some policymakers and a few economists (mainly the so-called supply-siders) have argued that vigorous economic growth would soon shrink budget deficits to about 2 percent of GNP or less, so that no future corrective fiscal action would be needed. (Some supporters of these views go even further and recommend that expansionary fiscal policy be reinforced by an easier monetary policy in order to strengthen the economic expansion.) The panelists rejected this view as inconsistent with the best empirical evidence.

On the question of whether the imbalance in the budget structure could be corrected, at least temporarily, by accelerating inflation, the panelists felt that the longer-term economic costs of any short-term "inflation solution" would exceed, by far, its limited benefits. Moreover, while inflation appears to have restrained imbalances in the budget structures of the 1970's (see Fosler and Sniderman), its effectiveness for correcting current and future structural imbalances has been greatly reduced for at least four reasons:

(1) A larger debt-to-GNP ratio, higher interest costs as a percent of the total budget, and greater sensitivity of interest rates to inflation, all imply that increased inflation will sharply raise the interest component of budget outlays.

(2) The more extensive cost-of-living indexing of government pensions, social security, and many other government entitlement programs has had a similar effect on these programs.

(3) Defense increases are being targeted now in real (i.e., inflation-adjusted) terms. Hence, higher inflation boosts defense requests and outlays.

(4) The upcoming 1985 bracket indexation of the personal income tax will greatly reduce the future revenue-enhancing effect of inflation via "bracket creep."

Immediate and Remote Origins of Structural Deficits

A comparison of the fiscal 1983 budget and its baseline projections through the late-1980's with a recent benchmark, such as fiscal 1980, reveals the more immediate origins of the large and rising structural deficits. Such a comparison singles out the following components as important sources of the current fiscal problems:

(1) Rapid growth in defense spending as a share of GNP;

(2) Large "supply-side" tax cuts to be followed by tax-bracket indexation in 1985;

(3) High and rising interest costs—the result of large recent deficits and high interest rates—by now a self-generating component of structural imbalance;

(4) Rapidly rising medicare costs (but, as noted below, most of these increases are being financed by rapid increases in social-security taxes);

(5) Greater inflation-sensitivity of many spending programs and lower inflation-sensitivity of revenues (as discussed previously).

However, a comparison of the fiscal 1983 budget and its baseline projections with much earlier benchmarks (from the late 1960's or early 1970's) yields substantially different results. Viewed against these earlier benchmarks, the increased share of total budget outlays as a percent of GNP reflects mainly the rising share of non-means-tested entitlement programs (particularly social security and medicare)—rather than a rising defense share. These long-term increases in social-security and health-care benefits reflected changes in demography as well as newly perceived needs and priorities. Moreover, these benefit increases were matched by steady increases in social-security taxes as a share of GNP. Thus, when social-security and medicare benefits and related tax revenues are considered jointly, these non-means-tested programs no longer qualify as a significant source of the large increases in the structural deficits.

The current and projected shares of the means-tested entitlement programs, defense outlays, and personal income taxes—measured as a percent of GNP—are all roughly in line with their corresponding shares during the earlier benchmark period. Thus, when compared with a benchmark of, say, 1970, the increased structural imbalance in the budgets of the mid-1980's appears to be largely due to their much higher share of interest costs, and the decline in the shares of corporate income, excise, and estate and gift taxes.

Such longer-term comparisons are interesting for a historical perspective on changing national priorities, and they may even illuminate some of the reasoning behind the Reagan Administration views concerning the large current deficits. (In this context, see Ooms.) However, the panelists agreed that economic policies and priorities are shaped and adjusted gradually, on a continuum. Therefore, they consider that the more immediate origins of the current structural deficits appear to be more relevant to policy, particularly in terms of the feasibility of future policy adjustments.

Long-Term Structural Problems[1]

Apart from the recent rise in the shares of defense spending and interest on the public debt, the shares of social

[1]The data and analysis for the discussion of long-term structural problems are taken from Capra's paper.

security and medicare have been rising as a percent of GNP since the mid-1960's. The social-security reforms passed in 1983 are expected to stabilize the share of social security over the near term, and to balance social-security benefits more closely with social-security taxes. Over the longer run, however, the social-security program will require further adjustments, since the benefits of all those retiring in this century will still include a sizable subsidy, whereas those retiring after the year 2006 will receive (capitalized) benefits that fall short of the (capitalized) value of their social-security taxes. Medicare benefits will continue to rise as a percent of GNP even in the near term, and the health-insurance trust fund is likely to be depleted by the late 1980's, or shortly thereafter, unless substantial reforms in this program are implemented soon.

The Economic Policy Forum considered whether these existing program structures, combined with a stable or rising defense share, might result in a *long-term* structural budget imbalance. The review relied mainly on long-term budget projections contained in Capra's paper (pp. 20-26). These applied 1983 tax laws to revenues and assumed the future extension of nondefense spending programs to maintain the current level of services provided. The results indicated that without further corrections, long-term structural problems would extend to the year 2000 and beyond. Even if the share of defense were to remain relatively stable around current levels, a large structural budget deficit would persist (approximately at its current level), since the share of health-care costs as a percent of GNP would continue to rise substantially under existing programs and demographic projections. Interest costs would be rising faster than GNP, raising the debt-to-GNP ratio from about 42 percent in the late 1980's to at least 65 percent by the end of this century, even under favorable demographic assumptions. (For less favorable scenarios, see Capra's paper.)

If defense as a share of GNP were to rise gradually to 9 percent by the end of this century, the structural budget deficit would rise to almost 8 percent of GNP, even under favorable demographic assumptions. (If current appropriations requests are fully implemented, defense outlays should reach 8.5 percent of GNP by the early 1990's.) With a 9-percent defense share, interest costs on the public debt would rise much faster than GNP and the debt-to-GNP ratio would approach 80 percent. (If these projections are extended into the twenty-first century, these structural imbalances become much more severe, because social-security benefits will be rising faster than GNP by that time.)

Obviously, such long-term projections are, at best, a highly imprecise exercise. But it is interesting to note that the results of the long-term structural analysis tend to reinforce the conclusions drawn from the earlier short-term analysis that major adjustments in the current budget structure are essential. Moreover, the results suggest that attempts to correct the structural imbalance are doomed to failure, as long as they are limited to holding down the spending share of nondefense programs other than social security and medicare. Both short- and long-term structural analyses document the need for a far more comprehensive adjustment plan: one that includes cuts in defense spending, social security and health care benefits, as well as tax increases.

Budget Deficits and Short-Term Growth

Traditional neo-Keynesian analysis used to welcome budget deficits as a desirable economic stimulus during recessions (or even during periods of substantially less-than-full employment). In fact, some "supply-side" economists have not only welcomed the stimulation of the large current budget deficits, but have also called for an easier monetary policy as a further reinforcement, in order to accelerate the short-term growth rate of the economy. In their view, such rapid growth would shrink the deficits to very manageable proportions before long. (Such reasoning implies that the current and projected deficits are mainly *cyclical* rather than *structural*.)

While the Forum members rejected these extreme "supply-side" propositions (mainly for reasons discussed on pages 6-7), the panelists reviewed the merits of the more traditional neo-Keynesian proposition that fiscal stimulation is desirable in a relatively underemployed economy. There was general agreement that the pervasive inflation experience of the 1970's produced a worldwide anti-inflationary bias in monetary policy and sensitized interest rates to inflationary expectations. (During much of the 1970's, inflation-adjusted interest rates in the industrialized countries were *negative*—in contrast to present relatively high positive inflation-adjusted interest rates.) In this new environment, large and persistent deficits create expectations of inflation that tend to raise interest rates, thus counteracting the stimulating effects that usually arise from large structural budget deficits. Any potential economic stimulus from these deficits is further reduced if the Federal Reserve feels compelled to tighten monetary policy in an attempt to offset the potentially inflationary impact of large structural budget deficits.

More important, persistent *structural* budget deficits ultimately create a "crowding out" problem—of investment, exports and domestic jobs—once the recovery is well under way (see page 7). Since the quick imposition of large spending cuts and tax increases is extremely difficult politically, the corrections of large imbalances in the budget structure cannot be "fine tuned" countercyclically—but have to be applied on a consistent and continuing basis until their goal is achieved. (In this connection, it is noteworthy that concern over the large and rising structural deficits impelled Congress to raise taxes in 1982 in the midst of a deep recession!)

Some members of the Forum also expressed the view that, in the present economic environment, short-term growth is mainly affected by monetary policy, whereas fiscal policy mainly influences the distribution of income, and the com-

position (rather than the level) of output. Thus, if fiscal ease induces monetary restraint, growth may be retarded. (But if fiscal ease is accompanied by monetary ease, inflation is likely to accelerate—possibly retarding growth before long.)

Linkages with Monetary Policy and Interest Rates

The participants noted that the present interactions between fiscal and monetary policy are unique for two reasons: (1) the size and deep-seated structural nature of the deficits is without precedent in the post-World War II period, and (2) profound changes have occurred in the perceived trade-offs between inflation and real growth.

Historically, budget deficits shrink quickly during periods of rapid economic growth. Since the deficit is now projected to grow or, at best, to remain high and stable even with projected strong economic growth, the Federal Reserve is confronted earlier and more directly with a trade-off between prolonged real growth and accelerating inflation. However, from a longer-term perspective, economists no longer believe in any lasting trade-off between inflation and unemployment (or real growth). Longer term, more inflation is likely to be associated with *higher* unemployment and *slower* real growth. Hence, the large structural deficits impart a potential long-term inflationary and anti-growth bias to the economy. If the Federal Reserve accommodates fiscal policy, these results are reinforced; if the Fed resists, higher interest rates may impair capital accumulation—thus also reducing long-term growth. Therefore, large and persistent structural budget deficits may preclude the emergence of any policy mix with desirable long-term consequences.

During its deliberations on the interactions between structural deficits and monetary policy, the Forum noted five specific linkages:

(1) Frequent large borrowing by the Treasury exerts upward pressure on interest rates and disrupts financial markets. With a continuing, relentless Treasury presence in the financial markets, there is no time to "unwind" this upward pressure.

(2) Treasury debt is expanding at an estimated 17 percent in 1984 (i.e., in a *single year)* and about 50 percent over the three years 1984 to 1986. If the Fed were to absorb the same portion of the increase in Treasury debt as it has in the past, it would have to buy enough government securities to raise total bank reserves by 28 percent in 1984 alone. This would be explosively inflationary for the credit markets.

(3) Past empirical work shows that monetary policy is responsive to pressures arising from budget deficits.

(4) Even if hard to quantify, financial markets do respond to the linkages between deficits and monetary policy. This buoys inflationary expectations, raises uncertainties concerning future inflation, and raises risk premiums.

(5) In an open economy, higher U.S. interest rates tend to raise interest rates abroad, restraining foreign growth and attracting foreign capital in the process. This helps finance the new public debt and thus reduces the "crowding out" of domestic investment by shifting some of the economic costs to U.S. exports and to import-competing industries. (For an elaboration, see pages 47-52.)

Structural Deficits and Long-Term Stability

There has been widespread recognition that large structural deficits could lead to an economy that moves further and further away from equilibrium. Preston Miller's paper provides a model to test the effect of current and estimated budget structures on long-term stability (see pages 43-46). In summary, he concludes from this analysis that an ongoing structural deficit of about 5 percent of GNP, of which roughly 3 percent represents interest cost, implies an unstable economy because it would ultimately result in very high and rising inflation rates.

The economy could be stabilized at a very high, but *nonaccelerating* rate of inflation if the structural deficit, net of interest cost, is reduced by about 2 percent of GNP (equal to about $60 billion in 1983). With the average real growth and the low real interest rates of the 1960's-1970's and a 2 percent structural budget deficit net of interest cost, it would take an inflation rate in excess of 10 percent in order to stabilize the economy in the long run. With the relatively low real growth and high real interest rates of the early 1980's, inflation rates might have to rise to as high as 25 to 30 percent before long-term stability could be restored to the economy. These trade-offs merely illustrate the extent of the long-run instability of the present structure.

The panelists noted that similar evidence of long-term instability had been derived from other models that analyzed the system in terms of rising government debt-to-GNP ratios. Some of the results imply that it may take a long time—a decade or two—before the intrinsic instability of the economy shows up in the form of inadequate growth of the capital stock, impaired real growth rates, and explosive inflation rates. But members of the Forum stressed that, in the real world, increasing awareness of structural instability could greatly compress this time horizon, leading more rapidly to growth-debilitating "long-run" results.

Financing the Deficits: What Gets Crowded Out?

Recent business-cycle analysis provides no evidence that large and rising budget deficits increase personal savings or crowd out business investment in plant and equipment. In fact, in recent years, the large cuts in personal income taxes (one of the "causes" of the large structural deficits) coincided with historically low personal savings rates. By contrast, the business-tax cuts are beginning to enhance corporate cash flow and are likely to help sustain corporate investment in plant and equipment.

Members of the Forum observed that, in the current U.S. economic environment, the large structural deficits are likely to "crowd out":

(1) Foreign trade;

(2) Inventory investment;

(3) Residential housing;

(4) State and local investment in infrastructures.

Personal saving from current income seems to be relatively unaffected by high current interest rates because it is fairly interest-insensitive and because the rise in the real after-tax interest rates received by savers is likely to be rather small. Business investment appears relatively unaffected because of the extensive financing out of internal cash flow and the relatively high ex-ante rate of return on investment, compared with the real after-tax cost of borrowed capital.

How soon are some of the symptoms of crowding out likely to occur under present circumstances? Wenglowski presented evidence that the early phases of this process of "forced" priority financing of the federal deficit is likely to get under way sometime in 1984. All panelists agreed that crowding out would become far more acute by 1985, if the economy continued to expand vigorously during 1984-1985. (For further comment, see Capra, pages 20-26.)

The Forum considered it highly unlikely that the United States could have an effective anti-inflationary monetary policy with large and persistent structural budget deficits. The crowding out of the foreign-trade sector, housing, and state and local infrastructures would create strong political pressures for congressional relief.

The crowding out of the foreign-trade sector results from high and rising interest rates that attract foreign capital and raise the value of the dollar. This impairs exports, increases imports in sectors not already protected by quotas, results in employment losses, and produces strong political pressures for protectionism. Thus, while capital inflows help to finance the budget deficit, the export- and import-competing sectors pay the price for this reduction in financial crowding out.

If the Federal Reserve tries to stay very firm, the rising trade deficit and the crowding out of investment and housing will ultimately result in a sluggish economy and a decline in the value of the dollar. Stagflation is likely to ensue. However, stagflation with large deficits is highly unstable because of the rapidly rising federal debt-to-GNP ratio.

Moreover, in the present setting, prolonged firmness by the Federal Reserve is likely to precipitate an international financial crisis because of the effects of rising U.S. interest rates on the interest costs of heavily indebted, less-developed countries, particularly in Latin America.

Options for Reducing the Structural Deficits

While reviewing the options for reducing the structural deficits, the Forum considered separately spending cuts and tax increases. In the end, the group concluded that a broad-based combination of large spending cuts and tax increases would be required for an effective solution. But the great political difficulties of achieving such across-the-board solutions in an election year or shortly thereafter were duly noted. Longer delays, however, may raise new obstacles. By late 1985 or by 1986, the U.S. economy could be in the midst of a downturn, or even a recession, that would make it politically more difficult, if not impossible, to achieve large tax increases or across-the-board spending cuts. In the meantime, the deficit would be further enlarged by a cyclical "recession component."

The panelists noted that all the politically easier spending cuts have already been achieved. Once national defense and international affairs (President Reagan's priority items for increased spending), social security (just recently reformed), and interest on the debt (an uncontrollable cost), are excluded, there is little room for further significant spending cuts. (For details, see Johnson, pages 27-30.)

On the revenue side of the ledger, a broad "loophole closing" package (such as the "hit list" proposed by Senate Finance Committee Chairman Robert Dole in 1983) may serve as a "starter." However, given the size of the revenue increases needed, further broad-based tax action will be necessary. (In this connection, see Hoffman's paper.)

The Forum noted that tax reform, with some revenue enhancement, may be obtainable through income-tax base broadening with lower rates—along the lines of the Bradley-Gephardt and other "flat-tax" proposals. Other options include a new consumption tax (such as a value-added tax), an income-tax surcharge, and repeal of the upcoming personal income-tax bracket indexation.

The Forum concluded that a modest "downpayment" was the most that could be expected in 1984: Possibly limited spending cuts, including defense, and some "tax-loophole closing" along the line of Senator Dole's proposal. Several panelists expressed concern that it might take a real crisis, such as sharply rising interest rates or a rupture in the international financial system, to compel further meaningful corrective action in 1985. Otherwise, the economy may enter its next recession before adequate corrections had been made. In that case, the recession would not only foreclose the opportunity for meaningful corrections, but it would also generate demands for more fiscal stimulation, thus escalating future problems.

Growth in The Deficit and The Structure of The Budget[1]

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Popular discussions of the budget and "the deficit problem" often pay little attention to the composition of the budget and trends in its structure, relying instead on general statements about the growth and/or level (or "burden") of federal spending and taxes in the aggregate. This sometimes leads to surprisingly uninformed judgments about the sources of growth of the deficit and possible remedies.

This paper is a simple arithmetic examination of the "deficit problem" in terms of the structure of the budget in recent years and projections through fiscal year 1988. This provides some insight into both the sources of growth in the deficit and the feasibility of alternative deficit-reduction policies.

I will not discuss whether deficits "matter." In my view, the burden of the evidence is that they do matter—to interest rates, to exchange rates, and to the structure of the economy. The current budget and policy outlook for the 1980's is, therefore, a source of considerable economic danger. It is reminiscent of the academic debate prior to the acceleration of inflation in the late 1960's as to whether or not inflation "mattered" to "real" economic variables. We discovered that inflation mattered a great deal—both economically and politically. We also discovered that it was very painful and costly to reduce inflation once it was imbedded in the economic structure. The same painful lesson may lie ahead for the structural deficits.

However, it seems likely that deficit reduction will remain a major goal of policy regardless of theoretical or econometric evidence offered on this subject in the near future. Whatever the ultimate economic effects of deficits may be, it is indisputable that the large deficits now projected will increase debt-service requirements in the coming years so much that the problem will become increasingly intractable. Under current policies, federal debt held by the public is projected to grow by more than $1.2 trillion dollars from 1983 to 1988, implying an increase of more than $70 billion in annual net interest payments.[2] Since this process of increasing the federal debt relative to GNP presumably cannot go on indefinitely, much larger tax increases and spending cuts than now required, or a painful reinflation, are implied eventually. This longer-term threat is now producing considerable concern among policymakers and, presumably, will do so among the public at large when it is more widely recognized.

The Budget Outlook

Projections of the budget under current policies—here defined to include the Administration's defense program as proposed in the July, 1983, Midsession Review—show the unified budget deficit rising from $200 to 1985 period to $300 billion by 1988. (See Table 1.) This means a deficit of about 6 percent of GNP in an economy with a relatively high level of factor utilization. (The assumed 1988 unemployment rate is 6.9 percent.) This is about the same share of GNP as in the deep recession year 1983, and about three times that experienced, on the average, during the 1970's. The financing of these very large, continuing deficits implies a sharp reversal in the level of federal debt outstanding in relation to the economy. Federal debt held by the public, having fallen continuously from the end of World War II until the mid-1970's, has now been rising sharply for several years, and is projected to rise toward 50 percent of GNP by 1988, offsetting in a few years a 27-year decline in that ratio.

It is of special concern, of course, that these continuing large deficits are no longer attributable to a low level of economic utilization, but reflect, instead, a large and very rapidly growing gap between projected levels of spending and revenues—even at high levels of utilization. The relative stability in the 6-percent share of the total deficit in relation to GNP from 1983-1984 to 1988 masks two offsetting trends. Taken by itself, the assumed improvement in the economy over this period would reduce the *cyclical* component of the deficit by 2 to 3 percent of GNP, that is by about $100 to $150 billion by 1988. However, this potential improvement is entirely offset by a growing *structural* imbalance between revenues and outlays. The "structural," or high-employment, deficit (here estimated at a 6-percent rate of unemployment) grows from slightly less than $100 billion in 1983, to $266 billion by 1988—a growth rate of 22 percent annually.

[1]The views expressed in this paper are those of the author and should not be associated with the Members or staff of the House Budget Committee. The paper was prepared with the assistance of Brian Cromwell.

[2]All years are fiscal years unless otherwise stated.

Table 1: The Budget Outlook[1]
(Fiscal years, $ billions)

	Actual		Projected (Estimates)				
	1980	1983	1984	1985	1986	1987	1988
Revenues	$ 517	$ 601	$ 665	733	$ 796	$ 857	$ 928
Outlays	577	796	854	941	1,022	1,118	1,214
Deficit	60	195	189	208	226	261	286
Off-Budgets Outlays	14	12	16	14	14	14	14
Total Deficit[2]	74	207	205	222	240	275	300
"Cyclical" Deficit	23	110	84	66	56	42	34
"Structural" Deficit[3]	51	97	121	156	184	233	266
Federal Debt Held by Public (end of fiscal year)	$ 715	$1,142	$1,330	$1,551	$1,790	$2,064	$2,363
			(Percent of GNP)				
Revenues	20.1%	18.6%	18.7%	18.8%	18.9%	18.8%	18.8%
Outlays	22.4	24.7	24.0	24.2	24.2	24.5	24.6
Deficit	2.3	6.1	5.3	5.3	5.4	5.7	5.8
Off-Budget Outlays	0.6	0.4	0.4	0.4	0.3	0.3	0.3
Total Deficit[2]	2.9	6.4	5.8	5.7	5.7	6.0	6.1
"Cyclical" Deficit	0.9	3.4	2.4	1.7	1.3	0.9	0.7
"Structural" Deficit[4]	1.9	2.8	3.2	3.8	4.2	5.0	5.3
Federal Debt Held by Public (end of fiscal year)	27.1	34.0	36.1	38.7	41.2	44.0	46.6

[1]Based on Congressional Budget Office (CBO) August, 1983, projections through 1986, extended through 1988 on the basis of economic projections by House Budget Committee (HBC) staff. Projections are adjusted for the CBO reestimate of the Administration's defense program as well as HBC staff estimates of 1984 spending levels.

[2]Detail may not add to totals due to rounding.

[3]Estimated at a 6-percent unemployment rate. Includes off-budget outlays.

[4]Percent of potential GNP.

What Is Driving the Deficit?

There are sharply different views on the sources of this dramatic increase in the structural deficit. The President, in arguing against the principle of raising taxes to reduce the deficit, has stated that the deficit is due to "uncontrolled domestic spending," and that the remedy must, therefore, lie in spending reductions. Critics of the Administration's policies have argued that the deficits are due to excessive tax cuts and too rapid a growth in defense spending, along with the growing interest outlays required to finance the corresponding deficits. In spite of the politicization of this issue, it may be of some use to examine the sources of deficit growth from a simple arithmetic point of view. Table 2 on page 10 shows revenues and major components of spending as shares of GNP for historical benchmark years, and as projected for 1984 and 1988. (All estimates are calculated on a high-employment basis, and as shares of potential GNP, to remove cyclical effects on revenues and outlays and, therefore, to show more clearly the underlying structural changes in the budget. However, the analysis would not differ substantially if done on an "actual budget" basis.)

When comparing 1984 and 1988 projections with the budgetary situation that prevailed when the Administration took office, the critics of the Administration are correct. Between 1980 and 1988, the structural budget deficit is projected to rise by about 3.5 percent of GNP: This is shown in the table as a drop in the revenue share of GNP of just under 1.5 percent in the outlay share. The 2.2 percent increase in outlays is more than accounted for by an increase of 2.6 percent in the national defense share of GNP and a rise of 1.3 percent in net interest. Domestic spending, taken as a whole, is projected to *decline* 1.6 percent of GNP during this period, in substantial part as a result of the budget cuts proposed by the President and enacted by Congress in 1981-1982. Especially striking is the sharp drop in the share of "nondefense discretionary spending"—the domestic pro-

Table 2: Structural Changes in the Budget[1]
(Fiscal years, percent of potential GNP)[2]

	Actual				Estimated	Projected
	1965	1970	1975	1980	1984	1988
Revenues	**17.9%**	**20.1%**	**19.3%**	**20.3%**	**19.3%**	**18.9%**
Outlays	**18.0**	**20.6**	**20.8**	**21.7**	**22.1**	**23.9**
National defense	7.2	8.2	5.5	5.1	6.3	7.7
Domestic	9.9	11.5	14.4	15.3	14.1	13.7
Entitlements and other mandatory programs	5.2	6.9	9.5	10.0	9.9	10.0
Non-means-tested	4.3	5.4	7.3	7.9	8.4	8.5
Social security	2.6	3.1	4.0	4.4	4.7	4.5
Medicare	—	0.7	1.0	1.3	1.7	2.1
Other	1.7	1.6	2.3	2.2	2.0	1.8
Means-tested	0.9	1.5	2.2	2.1	1.6	1.5
Medicaid	0.0	0.3	0.4	0.5	0.6	0.6
Other	0.9	1.2	1.8	1.5	1.0	0.9
Nondefense discretionary	4.7	4.5	4.9	5.3	4.2	3.7
Net Interest	1.3	1.5	1.6	2.0	2.6	3.3
Offsetting Receipts	-0.4	-0.6	-0.7	-0.8	-0.8	-0.8
Deficit	**0.1**	**0.5**	**1.5**	**1.4**	**2.8**	**5.0**
Off-budget	—	—	0.5	0.5	0.4	0.3
Total Deficit	**0.1**	**0.5**	**2.0**	**1.9**	**3.2**	**5.3**
Note: Potential GNP (billions)	$659.7	$960.4	$1,546.0	$2,640.9	$3,781.7	$5,045.6

[1]The underlying budget data and projections are on a high-employment basis, estimated at a 6-percent unemployment rate.
[2]Detail may not add to totals due to rounding.
Source: House Budget Committee.

grams subject to annual appropriations by Congress—from 5.5 percent of GNP in 1980 to 3.8 percent by 1988. The Administration's policies, put in place in 1981-1982, produced the enormous structural gap between revenues and spending that we now face, even after taking account of the increased revenues from the 1982 Tax Equity and Fiscal Responsibility Act. While substantial restraint was placed upon the growth of domestic spending, this was much more than offset by the growth proposed for the defense program, to say nothing of the reduction in the revenue share and rapid escalation of net interest payments.

If one pushes the clock back by a decade or two, however, it is possible to understand the President's view of the problem. Domestic spending grew very rapidly as a share of GNP in the late 1960's and during the 1970's (see columns 1 to 3 in Table 2). The national defense share of GNP in the 1960's, including the period before the Vietnam escalation, was generally (although not in 1965) at or above that projected under the Administration's defense program for 1988; revenues were also in the 18 to 19 percent range projected under the Administration's program. (The 20.1 percent share in 1970 reflects the impact of the temporary Vietnam surtax on individual and corporate incomes.) In particular, the higher share of outlays in 1988, 3.3 percent of GNP above that in 1970, is principally the result of the growth of non-means-tested entitlement spending. It accounted for 3.1 percent of the increased share during this period, mostly for social security and medicare. Interestingly enough, the aggregate share of means-tested entitlement programs, such as food stamps, medicaid, aid to families with dependent children (AFDC), and Supplemental Security Income (SSI) are now projected to take the same 1.5 percent share of GNP in 1988 that they did in 1970.

While rapid growth in the non-means-tested entitlement programs in the late 1960's and the 1970's was the principal factor raising federal *spending* relative to GNP, its impact on the budget *deficit* is by no means obvious, since social insurance taxes have been sharply raised explicitly to pay for these programs. Indeed, one can attribute the explosion of the structural deficit to entitlement growth only if one ignores the sharp shift in the structure of revenue sources, which is still continuing (Table 3). Thus, while social security and medicare outlays are projected to increase as a share of GNP by 2.8 percent between 1970 and 1988, revenue from social insurance taxes increases by 2.7 percent. At the same time, however, revenues from the corporate income tax, excise taxes, and estate and gift taxes drop by 3.1 percent of GNP, more than offsetting the rise

Table 3: Structural Changes in Budget Revenues[1]
(Percent of potential GNP)

	Actual				Estimated	Projected[3]
	1965	1970	1975	1980	1984	1988
Revenues[2]	**17.9%**	**20.1%**	**19.3%**	**20.3%**	**19.3%**	**18.9%**
Individual income	7.5	9.3	8.3	9.6	8.6	8.6
Corporate income	3.9	3.6	3.2	2.7	1.8	1.8
Social insurance	3.4	4.6	5.7	6.1	7.0	7.3
Excise taxes	2.2	1.6	1.1	0.9	1.0	0.7
Estate and gift	0.4	0.4	0.3	0.2	0.2	0.1
Other	0.5	0.6	0.7	0.8	0.7	0.6

[1]The underlying budget data and projections are on a high-employment basis, estimated at a 6-percent unemployment rate.
[2]Detail may not add to totals due to rounding.
[3]Current tax law plus extension of airport and airway trust-fund taxes in 1988.
Source: House Budget Committee.

in payroll taxes. (The share of individual income taxes falls only as a result of the removal of the Vietnam surtax.) Hence, it is more accurate to attribute the rise in the structural deficit from 1965 (or 1970) to 1988 to the erosion of these traditional sources of revenue than to growth in the trust-fund-financed entitlement programs. This is not to argue that such rapid entitlement growth was appropriate; that policies should not have aimed at larger trust-fund surpluses; or that future adjustments in these programs should not be undertaken. Indeed, as noted below, adjustments will be imperative in the case of medicare financing. But these important *policy issues* are quite different from the question of the *structural changes* underlying deficit growth.

Disagreement with respect to the "sources of the deficit" thus hinges critically on the base period from which one starts. Viewed from the perspective of 1980, the deficit is clearly being driven by the defense budget and, to a lesser extent, by President Reagan's tax program. Viewed in comparison with 1965 or 1970, however, the growth in the deficit appears to stem from the growth of entitlement spending if revenues are viewed as homogeneous and fungible, but can be traced to a decline in the contribution of corporate income, excise and estate and gift taxes if the trust-fund relationship between social-insurance taxes and spending is recognized. Interestingly enough, discretionary domestic spending—the annual appropriations by the "free-spending Congresses" sometimes alleged to be the source of our budgetary difficulties—does not emerge as a source of larger deficits from either perspective; nor does spending on the means-tested entitlement programs, sometimes associated in the public mind with "excessive spending on welfare." It should be noted that all of these propositions are "arithmetic," not analytic. Shares of GNP do not tell us whether we are spending "too much" or "too little" for defense, entitlements, or even the nondefense discretionary programs that have been cut back so sharply. The arithmetic says nothing about demographic change—the "graying of America" which the Office of Management and Budget discussed in the 1980 budget as a major source of growth in entitlement programs. Nor does it suggest criteria for "adequate" national security, which one might suppose would underlie budgetary proposals for spending on national defense. However, because the structure of the budget normally tends to change only gradually at the margin, the statistics do say something about the possibilities for deficit reduction in the next several years.

Potential for Spending Reductions

The issue of whether the primary emphasis in deficit-reduction actions should be placed on spending cuts or tax increases involves to a considerable extent the question of how much spending reduction appears to be "realistic" or "politically feasible." Obviously there is no demonstrably correct answer to this question, which involves very subjective judgments with respect to several issues.

First, how strong will be the incentives and pressures for political actions to reduce the deficits? Since policymakers in the past have been reluctant, for good reasons, to make major policy changes on the basis of projections as opposed to events, this may finally await the actual economic effects of continued large deficits. (The intense political controversy, and the inconclusive discussion among professional economists, with respect to the effects of deficits makes it unlikely that politically difficult major actions will be taken on the basis of current projections alone.)

Second, what is the relative appeal (or pain) of different spending reductions or tax increases? While this question varies with the specific proposals being discussed and no overall general conclusion can be reached, considerations relating to changes in the structure of the budget may provide some guidance. Unfortunately, this guidance is not

reassuring. In the comments that follow, I examine major spending categories of the budget in this context.

National Defense Spending

Given the very sharp increase in national defense spending proposed by the Administration, from 5.1 percent of GNP in 1980 to 7.7 percent by 1988, there has been a general disposition to "restrain" the growth in defense spending. Such sentiments have been expressed in public opinion polls, by many members of Congress of both parties and other policymakers, and in the proposals of private groups and many budget analysts. In fact, budget authority enacted for national defense in fiscal years 1983 and 1984 has run about $16 to $18 billion below the Administration's proposed levels. Nevertheless, there are several reasons why it may be unrealistic to expect very large contributions from defense spending to a reduction in the deficit.

First, it is important to have a sense of the realistic limits to reduction in the defense budget, assuming that major policy changes were made. The First Congressional Budget Resolution for 1984, which assumed a 5-percent rate of real growth in defense spending for 1984 to 1988, provided authorization levels roughly $30 billion below those proposed by the Administration for 1984 to 1988, for an outlay reduction of about $30 billion in 1988, or 10 percent of the projected 1988 deficit. (The budget resolution passed earlier by the Democratic-controlled House would have reduced defense spending by about $50 billion by 1988, implying roughly a 4-percent rate of real growth.) Final legislation (passed in November, 1983) provided appropriations somewhat below the budget resolution for 1984.

However, it is quite uncertain that the defense appropriations enacted through 1984 imply a path for defense spending that would generate $30 billion in outlay savings by 1988. As has been widely observed, the reductions in appropriations have been concentrated in operations and maintenance, personnel and other categories with relatively large outlay savings in the short run. No significant cuts were made in major weapons systems, as Congress agreed to proceed with funding for the MX missile, the B-1 bomber, and other systems that had been the subject of intense controversy. There are limits to cuts in "readiness" accounts if the longer-term program for defense procurement and major force structures proceeds in line with Administration requests, although it is possible that a "stretch-out" of the Administration's program will produce lower outlay levels in the 1980's than those in the outlay estimates used here.

There is also a question as to whether significant reductions are politically realistic in the current international climate. The increased tension in recent months between the superpowers, increased instability in the Middle East, and the recent intervention and potential for further involvement in Central America hardly suggest a political environment conducive to reductions in the defense budget—whatever the arguments with regard to fiscal requirements for an adequate defense capability.

Finally, it should be observed, as a matter of prudent budgeting, that we have historically tended to underprice the defense budget, with weapons systems (and sometimes other costs) rising well beyond earlier projections. There is concern among analysts that the rapid growth in the defense budget proposed by the Administration may be similarly underpriced, implying that the deficits projected here are understated.

Nondefense Discretionary Spending

This category of spending contains three major types of programs: general government administration; investment in human, physical and technological capital; and non-entitlement assistance programs, principally—but not exclusively—for low-income or otherwise disadvantaged households. (Low-income housing; employment and training; social services; the Women, Infants and Children (WIC) program; and medical care for veterans are examples of the last category.)

These programs are subject to annual appropriations; therefore, they are more vulnerable than the entitlement programs to actions by the Administration and Congress designed to reduce spending. Some programs in this category experienced considerable spending reductions late in the Carter Administration. This restraint sharply accelerated under President Reagan, under whom nondefense discretionary spending has been cut about 14 percent below previous policy levels. This leaves current spending for these programs at 4.2 percent of GNP; this share is projected to decline to 3.7 percent of GNP by 1988, about equal to the share of the 1950's.

While it is undoubtedly still possible to find savings in some discretionary programs, the large past reductions in these programs—and recent concern about the national objectives they are intended to serve—make it doubtful that further significant *net* spending cuts will be achieved within this category. Major physical nondefense capital investments funded by the federal budget are now about 13 percent lower in real terms than in 1980, even after an 18 percent real increase in grants for transportation (reflected in the Surface Transportation Act of 1982). These expenditures for physical capital are also a significantly smaller proportion of GNP than during the 1965 to 1975 period. Federal spending on nondefense research and development has fallen even more dramatically, from 1 percent of GNP in 1965, and 0.6 percent in 1980, to about 0.4 percent in 1984. The current debate over the adequacy of education expenditures, the perceived deterioration of public investments in transportation and water supply, concern over structural changes in the economy and requirements for worker training, and an apparent reaffirmation of support for expenditures for environmental protection provide additional evidence of the pressures to retain or increase spending levels in these programs. The "reserve fund" in-

cluded in the 1984 congressional budget resolution, while ostensibly directed at countercyclical concerns, reflected some of the longer-term budgetary issues in this area.

Means-Tested Entitlement Programs

These "safety-net" programs were cut by about 10 percent below prior policy levels in 1982 to 1985. Under current policies they are projected to fall from 2.1 percent of GNP in 1980 to 1.6 percent in 1988. However, this overall trend masks several different crosscurrents. Medicaid, in spite of significant recent reductions, is projected to rise slightly relative to GNP, in response to continuing rapid increases in medical costs, relatively high poverty rates, and demographic changes (although the aging of the population in the 1980's has decelerated from the exceptionally high rate of the 1970's). Other means-tested entitlement programs—principally food stamps, SSI, AFDC and other public assistance, child nutrition, and veterans' compensation—are projected to decline sharply, from 1.6 percent of GNP in 1980 to 0.9 percent in 1988. There now appears to be a substantial bipartisan consensus in the Congress to protect these programs from further major reductions. This is evidenced by their exclusion from various proposals to reduce the indexing of entitlement programs, such as those suggested by Senator Dole, Senators Danforth and Boren, and Representatives Jones and Campbell. The political salience of the "fairness issue" in the 1984 elections, and its likely impact on subsequent policies, makes further major reductions in programs directed to the low-income population unlikely in the near future.

Non-Means-Tested Entitlement Programs

This category of spending, which has shared with defense spending the primary attention of recent deficit-reduction proposals, consists principally of pension and disability programs (social security, railroad retirement, federal civilian and military employees' retirement, and veterans' service-connected pensions) and medicare. Additional major programs included are unemployment compensation, farm-income stabilization, and general revenue sharing.

This category of spending has grown extremely rapidly—both absolutely and as a share of GNP—in the last 20 years. From 1965 to 1984, the average annual rate of growth will have been 13.5 percent, and the share of GNP will have nearly doubled, from 4.3 percent to 8.4 percent. An increase in the share of GNP going to retirement and health programs was to be expected, given the rapid aging of the population during the 1970's. However, this expenditure growth was increased by a substantial liberalization of social-security benefits in the early 1970's—which greatly reduced the incidence of poverty among the elderly. Further enhancement resulted from the rapid rise in the relative price of medical services and, probably, from an "overindexing" of benefit levels (due to problems with the construction of the CPI during the 1970's). The rapid growth in these programs, for whatever reasons, gave rise to a clear sense among many policymakers that they are "out of control" and, therefore, should provide a major contribution to a reduction in budget deficits during the 1980's. The view that these are "middle-class" entitlement programs and the fact that they have been cut by only about 3 to 4 percent (in comparison with about 10-percent cuts for the means-tested programs) have further suggested to some that reductions in this area would promote equity.

In examining this issue it is important to distinguish between the severe and widely recognized *long-term* problem of financing medicare and the arguments for reducing entitlement spending to reduce budget deficits during the 1980's. The Hospital Insurance Trust Fund, in approximate balance in the early and mid-1980's, is projected by the Congressional Budget Office to fall into deficit in the late 1980's, and would be depleted by 1990 under even relatively favorable economic assumptions. Under these assumptions, the trust-fund deficit would be running about $60 billion per year by the middle of the 1990's, with a cumulative trust-fund deficit of $250 billion at this time. Clearly, major structural changes in medicare financing will have to be made. Were they to be made very soon, they might provide the additional benefit of some deficit reduction during the 1980's. However, since the trust fund does not go sharply into deficit until the end of the decade (and given the extreme political difficulty expected in dealing with the issue), it would be unrealistic to expect large reductions in the general budget deficit during the projection period to 1988 from medicare reform. It will be difficult enough to secure the financing changes required to ensure the integrity of the medicare program without asking it, in effect, to contribute to the financing of other programs as well.

This raises the question of whether it is realistic to seek substantial reductions in the unified budget deficit by increasing the surpluses now projected for the OASDI (old age, survivors and dependents) trust fund during the 1980's. (This paper does not deal with the military and civil-service retirement funds, for which some strong arguments for long-term structural reform can be made, but which would also require phase-ins that would preclude very large near-term outlay reductions.)

The deceleration of the aging of the population during the 1980's, the slower real wage growth during the past decade, and the outlay reductions from the Social Security Amendments of 1983 lead to a reduction in projected social-security outlays from 5.0 percent of GNP in 1984 to 4.7 percent in 1988. At the same time, the new law raises payroll taxes and infusions into the trust fund, with the result that the combined effect of social-security revenues and outlays on the budget deficit is a *reduction* of 0.4 percent of GNP between 1984 and 1988. As noted above, the mirror image of the "explosion" of social-security outlays in the last several decades has been the enormously rapid growth in revenue from social-insurance taxes, which more than doubled—from 3.4 percent of GNP in 1965 to a projected 7.0 percent in 1984.

One might argue as to whether or not treatment of the elderly has been "too generous." The large reduction in poverty among the aged has been a major social achievement; but, conceivably, this result—which was not ostensibly a goal of the program—could have been achieved in other ways. In any case, this issue is quite different from the question of whether the social-security trust-fund surpluses in the 1980's should be substantially increased to reduce the overall deficit. (We used to ask whether social security should be financed out of general revenues; now it is suggested that, in the short run, general expenditures—and specifically the rapidly growing defense budget—should be financed out of social security.)

I do not mean to suggest that the answer to this question is obvious in terms of budget priorities or general considerations of equity. James Capra (see pages 20-26) and others have demonstrated that recent and current social-security beneficiaries have received a very favorable rate of return in benefits relative to contributions; later retirees will not be treated nearly so generously under the new law. During the inflation shock and recession at the end of the 1970's, real income declines were experienced by most of the working population, while social-security benefits were fully protected against inflation. (The proportion of current beneficiaries who received these benefits, however, is declining rapidly with time.) An argument can be made for further strengthening the trust fund to avoid higher taxes on the working population when the baby-boom generation retires. Nevertheless, given the extreme difficulties in producing the social-security compromise of 1983, the problems involved in reopening such a sensitive issue, and the recognition that this "middle-class" entitlement program is also the major source of income support for the elderly poor, it seems extremely unlikely that the program will become the centerpiece of deficit reduction now that it is perceived as "paying its own way." Certainly the Congress, in enacting the higher payroll taxes in the compromise agreement, believed it was funding the projected levels of benefits, not a surplus to finance the defense budget.

Conclusions

This brief arithmetic foray into the recent history of the budget structure is not comforting for those looking for obvious, easy or even "sensible" ways to make large reductions in the deficit. Viewed in historical perspective, one can easily defend all the components of the current projected levels of the deficits:

- Projected revenue levels, while below the historically unprecedented share of GNP reached in the late 1970's, are in the range of revenues in the early 1970's, and above the share of the 1960's.
- Defense spending is projected to take a slightly smaller share of GNP by 1988 than it did in 1970, at the height of the Vietnam escalation, but also a smaller share than during the 1950's or the early 1960's, before the Vietnam escalation.
- Annually appropriated domestic programs for investments in research, human and physical capital, energy conservation, environmental protection, and other areas are now at levels low enough to produce significant concern among informed analysts.
- Means-tested entitlement programs, having borne an extremely disproportionate share of budget reductions in the last several years, are unlikely to be asked to bear this burden again.
- Non-means-tested entitlement programs, in spite of their very rapid growth during the 1970's, will be strongly defended against benefit reductions or tax increases beyond those required to ensure solvency of the social-insurance trust funds. While financing reform for medicare is imperative during the decade to provide for the 1990's and later, meeting this objective is unlikely to make a substantial reduction in budget deficits during the 1980's. And reopening the social-security debate with the aim of reducing the deficit in the rest of the budget, after surpluses in the trust fund have been painfully restored, is hardly an inviting prospect for policymakers.

These considerations suggest that there are no very compelling arguments for "targeting" deficit reduction in the 1980's on a particular source. Domestic spending is clearly not "out of control"; but neither are defense spending or tax burdens outside the bounds of recent post-World War II experience.

The evidence does suggest that extremely hard choices will have to be made among the goals of equity, national security, and investments in human and physical capital if deficit reduction during the 1980's is to be achieved primarily by further reductions in spending. This unavoidably leads to a comparison between the value of each of these objectives and the level of tax burdens—to the bottom line of public finance. At the moment, there is an unsustainable gap between the levels of tax burdens and federal spending generated by the political process. Deficits equal to 20 percent of outlays give the false impression that government can be had "on the cheap," at 80 cents on the dollar. It cannot, and this leads to the question: Are we prepared to pay for the activities of government we want?

Budget Projections and Budget Choices[1]

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From the accompanying tables (see pages 16-19), we draw the following conclusions:

- Under current taxing and spending policies, the federal deficit will remain around 5 percent, or more, of gross national product for the foreseeable future.
- The deficit problem will not go away even if economic growth proves more robust than we now expect.
- Because the deficit problem is so big, substantial changes in fiscal policy are required, possibly including a new tax on consumption.

Baseline Budget Projections

Table 1 depicts the budget outlook under current taxing and spending policies through fiscal year 1988. Although it does not reflect all congressional action through the end of the 1983 session of Congress, subsequent congressional actions did not change the situation substantially. While cuts in medicare and in cost-of-living adjustments for federal retirees were not enacted, appropriations for both defense and nondefense discretionary spending were less than assumed in the congressional budget resolution. Also, the slowdown in spending that occurred in 1983 may continue to hold down outlays in 1984. We estimate that fiscal year 1984 outlays will total about $185 billion, and that the deficit will be about $185 billion. Because revenues remain at just under 19 percent of GNP, while outlays stay at about 24 percent of GNP, the deficit is stuck at about 5 percent of GNP, with a tendency to rise after 1986.

With the deficit at such a high level, debt held by the non-Federal Reserve public rises from 31 percent of GNP at the end of fiscal year 1983 to 42 percent by the end of 1988. This would return us to a level of debt last seen in 1961 (see chart on this page).

The composition of spending is likely to change substantially over the next five years. In the preliminary baseline projections, nondefense spending—entitlements and nondefense discretionary programs combined—declines from 15.4 percent of GNP in 1984 to 13.9 percent by 1988. (Certain programs, notably medicare and medicaid, are an exception to this generalization.) Spending for defense is projected to grow from 6.7 to 7.3 percent of GNP, and net interest outlays to increase from 2.9 to 3.2 percent of gross national product.

Debt Held By The Public[1]

[1] Excluding Federal Reserve Holdings

Additional perspectives on the deficit outlook are provided in Table 2. First, since the budget picture fails to improve despite falling unemployment, the structural deficit gets worse. Each year a smaller and smaller portion of the deficit can be attributed to high unemployment. The "standardized-employment" deficit (standardized at 6 percent unemployment) rises from 3.0 percent of standardized GNP in 1984 to 4.2 percent by 1988.

James Tobin has popularized the concept of the primary deficit, which roughly equals the on- and off-budget deficits, excluding net interest payments and Federal Reserve payments to the Treasury. In a paper before a 1982 Conference Board meeting, Tobin showed that eliminating the primary budget deficit would lead to a declining trend in the ratio of the federal debt to GNP, as long as the effec-

[1] The budget projections discussed in this paper date from November 1, 1983. More recent projections are given in *The Economic and Budget Outlook: An Update*, Congressional Budget Office (August, 1984). The new projections do not alter the outlook presented in this paper. The authors gratefully acknowledge the assistance of Kathy A. Ruffing in preparing this paper. The views expressed are the authors' and not those of the Congressional Budget Office.

Table 1: Preliminary Baseline Budget Projections
(Fiscal years)

	1984	1985	1986	1987	1988	1984	1985	1986	1987	1988
	Billions of Dollars (Estimates)					Percent of GNP (Estimates)				
Revenues	**$ 665**	**$ 733**	**$ 796**	**$ 857**	**$ 928**	**18.7%**	**18.8%**	**18.9%**	**18.8%**	**18.8%**
Outlays	**859**	**925**	**993**	**1,084**	**1,177**	**24.1**	**23.8**	**23.5**	**23.8**	**23.9**
Deficit	**194**	**192**	**197**	**227**	**249**	**5.5**	**4.9**	**4.7**	**5.0**	**5.1**
Revenues	**665**	**733**	**796**	**857**	**928**	**18.7**	**18.8**	**18.9**	**18.8**	**18.8**
Individual income taxes	293	324	353	385	418	8.2	8.3	8.4	8.4	8.5
Corporate income taxes	60	68	78	84	87	1.7	1.7	1.8	1.8	1.8
Social insurance taxes	243	272	300	323	357	6.8	7.0	7.1	7.1	7.2
Excise taxes	37	38	34	34	34	1.0	1.0	0.8	0.7	0.7
Estate and gift taxes	6	6	5	5	4	0.2	0.2	0.1	0.1	0.1
Custom duties	10	10	10	11	11	0.3	0.3	0.2	0.2	0.2
Miscellaneous receipts	16	16	16	17	17	0.4	0.4	0.4	0.4	0.3
Outlays	**859**	**925**	**993**	**1,084**	**1,177**	**24.1**	**23.8**	**23.5**	**23.8**	**23.9**
National defense[1]	239	265	295	328	360	6.7	6.8	7.0	7.2	7.3
Entitlements and mandatory	389	413	441	473	510	10.9	10.6	10.4	10.4	10.3
Medicaid	21	24	26	29	32	0.6	0.6	0.6	0.6	0.6
Other means-tested benefits	40	41	42	43	45	1.1	1.1	1.0	0.9	0.9
Social security	177	189	202	215	230	5.0	4.9	4.8	4.7	4.7
Medicare	65	74	82	94	108	1.8	1.9	1.9	2.1	2.2
Federal employee retirement	22	23	25	26	27	0.6	0.6	0.6	0.6	0.5
Other non-means-tested	64	62	63	66	70	1.8	1.6	1.5	1.4	1.4
Nondefense discretionary	157	163	166	174	179	4.4	4.2	3.9	3.8	3.6
Civilian agency pay raises	1	1	3	5	7	0.0	0.0	0.0	0.1	0.1
Offsetting receipts	-31	-34	-40	-39	-40	-0.9	-0.9	-0.9	-0.9	-0.8
Net interest	104	116	128	144	160	2.9	3.0	3.0	3.2	3.2
Addendum:										
GNP	$3,562	$3,890	$4,222	$4,563	$4,930	$3,562	$3,890	$4,222	$4,563	$4,930
Federal purchases (NIA basis)	297	337	366	401	439	8.3	8.7	8.7	8.8	8.9
Defense	221	248	276	307	340	6.2	6.4	6.5	6.7	6.9
Nondefense	76	89	90	94	99	2.1	2.3	2.1	2.1	2.0

[1]Fiscal year 1984 budget resolution extrapolated.
Source: Congressional Budget Office estimates as of November 1, 1983

tive interest rate is less than the rate of growth of GNP.[2] As Table 2 shows, the primary deficit does not grow between fiscal year 1984 and 1988 (and declines as a percent of GNP), since the growth in the actual deficit equals the increase in interest costs. Nevertheless, the primary deficit is still $119 billion (or 2.4 percent of GNP) in 1988.

Economic Assumptions

These budget projections are all based on the economic assumptions shown in Table 3. The 1984 assumptions are CBO's August, 1983, forecast. Beyond 1984, the assumptions are not a forecast, but *noncyclical projections* which assume that the economy moves gradually toward higher employment levels. (The projections for 1987 and 1988 are extrapolations prepared by CBO for the staff of the House Budget Committee using historical average productivity-growth rates.)

Under these assumptions, the average rate of real growth of GNP over the 1982 period is 4.0 percent. This is precisely equal to the average real growth rate in the six years following the troughs of earlier post-World War II recessions. The highest average rate of growth during the first six years of the 1961 to 1969 expansion (which included the Vietnam War) was 5.2 percent—just over one percentage point per year higher than assumed here.

Sensitivity to Alternative Assumptions

What if economic growth approached the highest rate ever experienced in the six years following a recession? If real growth were one percentage point per year higher, CBO estimates that the 1988 deficit would be about $80 billion lower. Revenues would be about $60 billion higher, and

[2]James Tobin, "Budget Deficits, Federal Debt, and Inflation in Short and Long Runs," in A.T. Sommers, editor, *Toward a Reconstruction of Federal Budgeting*. The Conference Board, MISC. 83-1, 1983.

Table 2: Alternative Budget Measures
(Fiscal years)

	1983	1984	1985	1986	1987	1988
			Billions of Dollars			
Unified Budget Deficit	$ 195	$ 194	$ 192	$ 197	$ 227	$ 249
Off-Budget Deficit	12	16	14	14	14	14
Total Deficit[1]	207	211	206	211	241	263
Standardized-Employment Deficit[2]	109	112	127	141	180	210
Primary Deficit[3]	133	121	105	98	112	119
Debt Held by the Public, End of Year	1,142	1,335	1,540	1,750	1,990	2,252
Debt Held by the Public, Excluding the Federal Reserve, End of Year	997	1,178	1,373	1,572	1,799	2,047
			Percent of GNP			
Unified Budget Deficit	6.0%	5.5%	4.9%	4.7%	5.0%	5.1%
Standardized-Employment Deficit (Percentage of standardized GNP)[4]	3.1	3.0	3.1	3.2	3.8	4.2
Primary Deficit[3]	4.1	3.4	2.7	2.3	2.5	2.4
Debt Held by the Public Excluding the Federal Reserve, End of Year	30.9	33.1	35.3	37.2	39.4	41.5

[1]Unified and off-budget deficits.
[2]Unified budget deficit standardized at 6-percent unemployment.
[3]Total unified and off-budget deficits less net interest and Federal Reserve profits.
[4]Unified budget basis, calculated at 6-percent unemployment, with 2.7-percent average growth of standardized real GNP during the 1984 to 1989 period.
Source: Congressional Budget Office.

Table 3: Economic Assumptions[1]
(Calendar years, $ billions)

	(Fiscal Years)					
	1983	1984	1985	1986	1987	1988
Gross National Product						
Current dollars	$3,313	$3,644	$3,972	$4,307	$4,651	$5,028
Percent change, year over year	7.8%	10.0%	9.0%	8.4%	8.0%	8.1%
Constant (1972) dollars	$1,532	$1,608	$1,672	$1,730	$1,789	$1,850
Prices						
GNP deflator (year over year)	4.5%	4.8%	4.8%	4.8%	4.4%	4.6%
Consumer price index (year over year)	3.2	4.7	4.7	4.7	4.5	4.6
Unemployment Rate (annual average)	9.7	8.4	7.9	7.5	7.1	6.9
Interest Rates						
91-day Treasury bill (annual average)	8.8	8.6	7.7	7.4	6.9	6.9
3- to 5-year Treasury notes (annual average)	10.5	10.4	9.6	9.4	8.6	8.2

[1]Through 1986, the assumptions are those of the Congressional Budget Office, August, 1983. The assumptions for 1987 and 1988 are extrapolations prepared by CBO for the staff of the House Budget Committee using historical average productivity-growth rates.

Table 4: The Effects of Higher Interest Rates on Budget Projections
(Fiscal years, $ billions)

	1984	1985	1986	1987	1988
One-Percentage Point Increase in All Rates[1]					
Net Interest					
Caused directly by higher interest rates	$ 2.3	$ 7.7	$11.2	$14.2	$17.2
Caused by resulting increase in deficit	0.1	0.6	1.6	2.9	4.6
Subtotal	2.4	8.3	12.8	17.1	21.8
Other Outlays	0.2	0.3	0.3	0.4	0.4
Outlays	2.6	8.6	13.1	17.5	22.2
Revenues	0.4	0.9	1.0	1.1	1.1
Deficit	2.2	7.7	12.1	16.4	21.1
Rates Constant at October, 1983, Levels					
Net Interest	-0.5	5.1	14.1	24.9	39.6
Other Outlays	a	0.3	0.5	0.6	0.7
Outlays	-0.5	5.3	14.5	25.5	40.3
Revenues	0.1	0.7	1.3	1.8	2.3
Deficit	-0.6	4.6	13.3	23.7	38.0
Average Cyclical Increase in Rates					
Net Interest	1.3	9.5	21.5	36.2	56.1
Other Outlays	0.1	0.5	0.8	1.0	1.2
Outlays	1.3	10.0	22.3	37.2	57.3
Revenues	0.3	1.1	1.9	2.7	3.3
Deficit	1.0	8.8	20.4	34.6	54.0

[a]Less than $500 million.
[1]Starting January 1984.
Source: Congressional Budget Office.

outlays would be about $20 billion lower, mostly because of lower debt-service costs.

Since more rapid economic growth would cause little improvement in the underlying structural deficit, the resulting increase in private credit demands would be likely to put further pressure on interest rates. The result could easily erode any improvements in the deficit that would otherwise come about. During the median post-World War II recovery—with much lower federal borrowing—three-month Treasury bill rates rose 2.2 percent during the six years after the trough. (Similar increases occurred in other interest rates.) Were interest rates to rise by that amount by the end of 1988 (instead of declining, as the baseline projections assume), the estimated deficit would be $54 billion higher. (See Table 4.) Even under the more conservative assumption that interest rates remained constant, the deficit would still be higher by $38 billion.

In the longer run, more rapid, sustained economic growth could narrow the deficit. But it is not prudent budgeting to assume a major increase in long-run growth, particularly since many economists believe that the conditions that brought about the rapid growth of the 1950's and 1960's are no longer present. Moreover, the present projections already assume a considerable improvement over the record of the last five to ten years, and imply that the recovery will last longer than most post-World War II recoveries.

Consequences of High Deficits

Thus far in the current recovery, the export sector has borne the brunt of the high federal deficits. High real interest rates here and political and economic uncertainties abroad are making the United States a relatively attractive place to invest. Foreigners must acquire dollars to purchase

Table 5: Illustrative Budgetary Freeze
(Fiscal years, $ billions)

	1984	1985	1986	1987
Preliminary Baseline Deficit	$194	$192	$197	$227
Policy Changes:				
1) Defense—Freeze Budget Authority	—	- 9	-30	-57
2) Nondefense Discretionary Spending—Freeze Budget Authority	—	- 2	- 6	-11
3) No Cost-of-Living Adjustments[1]	—	- 7	-18	-28
4) No Civilian Agency Pay Raises	—	- 1	- 3	- 5
5) No Tax Changes	a	- 8	-24	-38
6) Interest Savings	a	- 1	- 6	-17
Total Changes	a	-29	-87	—156
Plan Deficit	$194	$163	$110	$ 71

[a]Less than $500 million.
[1]Military retirement is included in category (1).

U.S. securities, and in doing so they bid up the exchange value of the dollar. This makes it harder for export industries to compete abroad and for domestic industries to compete with imports.

In the longer run, there are two other adverse results. First, as the recovery continues, there may be more crowding out of business capital formation. Potential economic output and standards of living will then rise more slowly. High real interest rates also raise questions about the sustainability of the recovery in residential construction.

Second, federal interest costs will grow and grow. In the baseline projections, net interest costs grow from $88 billion in the fiscal year just completed to $160 billion in 1988—an increase of $72 billion, or 82 percent. If we were to assume that interest rates remained constant at their October, 1983, levels (Table 4), the net interest bill would rise by $112 billion or 127 percent. If rates rose by the average amount of the past cyclical recoveries, interest costs would grow by another $16 billion and would reach 4.4 percent of GNP by 1988. These increasing interest costs would add their own momentum to the deficits and would severely limit future fiscal-policy choices.

Options for Reducing The Deficit

As shown earlier (Table 1), a large portion of federal spending is devoted to a very few programs. Defense, entitlements and net interest constituted 79 percent of outlays in 1980 and are projected to grow to 88 percent by 1988. In turn, social security and medicare constituted 56 percent of entitlements in 1980, growing to 66 percent by 1988. The possibility of cutting other programs should not be ignored. But since they have already been cut significantly, it is unlikely that further substantial cuts in total spending will be achieved without major curtailments in the growth of defense, social security or medicare.

To illustrate the magnitudes involved, Table 5 shows the consequences of freezing spending and tax rates—insofar as is generally feasible—for *three* years. If such a draconian plan were adopted, the projected 1987 deficit would be reduced by $156 billion. Savings of anywhere near this magnitude seem implausible, however, since the Congress has already scaled back the Administration's requested increases in defense and has recently enacted major social-security legislation.

More revenues, therefore, would be required. Three options are available: raise tax rates; broaden the base of existing taxes; or introduce new taxes. Tax rates were recently cut to encourage economic efficiency. Reversing this action would create widespread concern about adverse supply-side effects. Base broadening is more desirable from an efficiency standpoint. But raising substantial additional revenues from existing taxes would require reducing tax preferences for home ownership and health care—activities that many feel have high social value, and that Congress has hesitated to touch. A major tax reform, such as adoption of a broad-based flat-rate income tax, would also cause a redistribution of after-tax incomes. Finally, Congress could enact new taxes—for example, a value-added tax or an energy excise tax. Either a broad-based income or consumption tax could be designed to raise more revenues without severe effects on incentives.

Short- and Long-Term Structural Budget Deficits
Alternatives and Implications

by James Capra
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Despite the cyclical economic rebound the economy is now experiencing, the outlook for the federal budget remains a serious problem. It poses a significant threat to continued noninflationary growth.

Using technical estimates and reestimates, based on actuals for fiscal year 1983, and a robust economic growth scenario—about 5.0 percent real growth in 1984, and 3.5 percent average annual growth in 1985 to 1988—we find that the outlook for the deficit has changed little. Deficits of about $200 billion annually in 1984 to 1986 and $250 billion in 1987 to 1988 appear to be what is in store in the absence of a major policy shift. In response to those who would argue that the country can grow out of the deficits, my own estimates show that with 6 percent real economic growth over the next few years, the deficit would still be $160 billion by 1986 and we would only start to inflate our way out by 1988. In all likelihood, however, in contrast to these optimistic scenarios, the economy will experience a recession sometime within the next five years. In that case, the deficits will become much larger—possibly $300 billion or more by the end of the period.

Are Federal Deficits Important?

Some public officials have recently been repeating a point made by academicians in the 1970's: Historically, high deficits did not coincide with high interest rates; hence, even if the economy does not grow out of the projected deficits, they do not pose a threat. There are at least two important reasons why this inference from the 1970's is unlikely to be applicable to our current circumstances.

First, the deficits now projected are without precedent in the post-World War II period, in both magnitude and duration. A comparison with the 1974 to 1975 recession and subsequent recovery is useful. The deficit and its drain on the credit markets peaked in calendar year 1975 and quickly subsided during the second and third year of that recovery. That is not the case now. (See Table 1.) In 1977, the third year of recovery, public-sector borrowing absorbed only 20 percent of funds raised in the credit and equity markets. In 1985, at what would be a comparable stage of this business cycle, public borrowing is projected to absorb 40 to 55 percent of the funds raised.

A second reason why it is likely that deficits now projected will affect interest rates (and may be affecting them now) is that the country is operating under a different monetary-policy regime than in the 1970's. There is no indication that the present Federal Reserve Board Chairman or other members of the Federal Open Market Committee are going to accommodate large deficits that persist well into an economic recovery. My colleague, Allen Sinai, has put these two facts together—the expected size and persistence of large deficits and the post-October, 1979, monetary policy regime—in an analytical relationship that suggests that long-term corporate bond rates are 200 to 300 basis points higher now than they would be if the expectation were for $100 billion, rather than $200 billion, deficits.[1] (An important distinction between Sinai's work and previous studies is the use of "expected" deficits rather than actual deficits in his interest-rate equation.)

Financing the Deficit

Where will all the funds needed to finance the deficits come from, and what will be the effects? The answer is that these funds will come from our savings and the savings of the rest of the world. (See Table 2.)

First, it becomes evident that even with larger domestic private savings (as a share of GNP) and large foreign capital inflows, the 1985 deficit would still siphon off enough savings to reduce the funds available for private investment as a share of GNP to well below the average of the 1960's and 1970's. The rise in gross business savings reflects the improvement in the profitability that is accompanying the recovery and the improvement in corporate cash flow resulting from the 1981 Economic Recovery Tax Act. But it is not enough to offset the effect of the large deficits. More importantly, when increases in capital-consumption allowances are taken into account—they are partially a result of the incentives toward shorter-lived equipment embedded in the Accelerated Cost Recovery System—saving available for net new investment looks very small compared to the past.

Second, those foreign capital inflows ("net foreign investment" in Table 2) are the financial counterpart of massive current account deficits, which could literally cost

[1] Allen Sinai, "Deficits, Capital Markets, and the Economy." Testimony before the House Subcommittee on Telecommunications, Consumer Protection and Finance, April 14, 1983.

Table 1: Funds Raised in The Credit and Equity Markets
(Calendar years)

	Public-Sector Borrowing[1] ($ Billions)	Private-Sector Borrowing ($ Billions)	Total Funds Raised[2] ($ Billions)	Public-Sector Borrowing (Percent of total)	Private-Sector Borrowing (Percent of total)
1973	$ 21.5	$180.2	$201.7	10.6%	89.4%
1974	27.3	166.6	193.9	14.1	85.9
1975 (1st Recovery Year)	99.1	115.3	214.4	**46.2**	**53.8**
1976 (2nd Recovery Year)	84.2	189.3	273.5	**30.8**	**69.2**
1977 (3rd Recovery Year)	72.2	262.1	334.3	**21.6**	**78.4**
1978	72.8	328.9	401.7	18.1	81.9
1979	57.6	344.4	402.0	14.3	85.7
1980	106.3	290.8	397.1	26.8	73.2
1981	109.7	297.2	406.9	27.0	73.0
1982	207.1	233.6	440.7	47.0	53.0
1983[a] (1st Recovery Year)	259.0	244.0	503.0	**51.5**	**48.5**
Assuming growth of the Federal Reserve's Credit Aggregate (D)[3] of:					
		8% 11%	8% 11%	8% 11%	8% 11%
1984[a] (2nd Recovery Year?)	$258	$192 $348	$450 $606	**57.3% 42.6%**	**42.7% 57.4%**
1985[a] (3rd Recovery Year?)	264	212 398	476 666	**55.5 39.9**	**45.5 60.1**

[1]Includes federal and state-local borrowing.
[2]Includes domestic nonfinancial credit; nonfinancial borrowing by foreigners; domestic and foreign equities issued in the United States.
[3]Domestic nonfinancial credit.
[a]Estimated.
Sources: Board of Governors, Federal Reserve System; James R. Capra.

Table 2: Funds Available for Gross and Net Investment
(Calendar years, percent of GNP)

Source of Funds	1961 to 1970	1971 to 1980	1985 Projection
Private savings	4.7%	4.9%	4.0%
Plus: Business savings (gross)	11.7	12.0	13.5
State-local budget surplus	0.0	1.0	1.0
Net foreign investment[1]	-0.5	-0.1	1.6
Equals: **Total funds available**	**15.9**	**17.8**	**20.1**
Less: Federal budget deficits	0.5	1.9	5.3
Equals: **Funds available for gross investment**	**15.4**	**15.9**	**14.8**
Less: Capital consumption allowance	8.4	9.9	11.0
Equals: **Funds available for net investment**	**7.0**	**6.0**	**3.8**

[1]Negative numbers indicate net U.S. investment abroad; positive numbers, net foreign investment in the United States.
Sources: U.S. Department of Commerce; James R. Capra.

millions of jobs in export- and import-competitive manufacturing sectors. This year, the merchandise trade deficit is likely to be $60 billion, and we forecast that it could grow to $90 to $100 billion in 1984. The deficit on manufactured goods will grow by $25 billion in 1983, and probably by another $25 billion in 1984. (The Institute of International Economics estimates there are 25,000 to 40,000 jobs associated with each billion dollars of exports.) Lasting damage is being inflicted on our international trade competitiveness that may be hard to repair. In short, it is true that foreign capital inflows are indeed helping to reduce somewhat the financial crowding out of private borrowing. (My estimate for 1985, in the last column of Table 2, indicates that 1.6 percent of GNP is likely to be made available from abroad for financing the federal deficit.) However, this reduction in *financial crowding out* is taking place through a process of *economic crowding out* that squeezes U.S. exporters and domestic competitors to foreign imports out of the markets for manufactured goods. For the affected firms and industries, it is their products, their profits, and ultimately their workers that may be crowded out by large federal budget deficits. An important consequence of this is the increasing discussion of protectionist legislation—an outcome in which no one is likely to be a winner.

When looking at the budget problem and trying to evaluate goals, it is clear from Table 2 that cutting the deficit to 2 percent of GNP would markedly improve the outlook for capital formation and future growth. Funds available for investment would rise, provided that the budget cuts were not directed at cutting personal and business saving rates, and provided that the baseline GNP path was maintained (e.g., through some easing in monetary policy). Budget changes that would reduce the flow of saving would not be a helpful step. Although such actions may have to be part of a package of changes for political reasons, they do not contribute to a long-run goal of improving capital formation and easing credit-market pressures.

What Will It Take To Reduce the Deficit Significantly?

Reducing the deficit to 2 percent of GNP by, say, calendar 1986 would require $135 billion of budget changes, according to our calculations—$100 billion of combined spending cuts and revenue increases and about a $35 billion reduction in interest costs.

On the revenue side, $50 billion in tax increases for 1986 is about what the First Concurrent Budget Resolution for fiscal 1984 had in mind. Bills to cut back on tax indexing could provide some of the additional revenues. But it is clear that it would take a major new tax—like some form of consumption tax—together with miscellaneous other changes, like those recently considered by the Senate Finance and Budget Committees, to reach this goal. With respect to tax increases, an important point may be derived from the more extreme position taken by supply-siders: Tax increases that reduce saving are not very useful.

While it seems clear that something can be done to improve the revenue side, outlay reductions are another matter. Here I am primarily referring to nondefense outlays. Congress has already set out on a course that is scaling back the President's defense buildup. Our baseline projections assume a cut of $18 billion in outlays from the President's proposals for fiscal 1985 and a bigger cut for fiscal 1986. This is what was assumed in the First Concurrent Resolution, and action in 1983 by the authorization and appropriations committees was consistent with these cuts.

With respect to nondefense outlays, the view exists that with the 1983 social security (OASDI) legislation, further changes—such as cost-of-living (COLA) freezes—are not legitimate options. This results in an untenable position if we try to get $50 billion in spending cuts. When interest, defense and OASDI outlays are excluded from projected 1986 outlays, all that is left is $387 billion of a total of $1,010 billion. More than one-half of the programs that are left have already been cut severely. (This includes means-tested benefits, grants and civilian-agency pay.) It is unreasonable to expect that $50 billion could be taken from these programs—reducing them in fiscal 1986 to $10 billion below the estimated 1984 level. The conclusion is inescapable: If a big cut is to be made in spending (say $50 billion), social security—and possibly even defense—will have to undergo further surgery.

Social Security and Indexing

Some people, both in the Congress and in the private sector, have suggested COLA reductions for non-means-tested benefit programs. One argument made against these and other proposals designed to reduce the future cost of the social-security program is that future benefits for current social-security recipients were already cut by the Social Security Act Amendments of 1983—hence it is not appropriate to return to them for further reductions. Another argument is that social security is a separately financed system that should be considered outside the regular budget-balancing process. In fact, after 1990, the new law orders that social security be taken "off budget." However, at least two important considerations that are counter to this line of reasoning deserve careful review.

First, most of the recipients who would be affected by the freeze or COLA-reduction proposals received COLA adjustments well in excess of what is generally accepted as having been the rate of inflation since the early 1970's (when automatic COLA adjustments first became law), because of distortions in the Consumer Price Index. From 1978 to 1982, COLA's increased social-security benefits by 59.8 percent while consumer prices, as measured by the personal consumption deflator, rose by 47.4 percent (calculated on a first-quarter-to-first-quarter basis used for indexing social-security benefits). This "overindexing" gap of 12 percent is almost exactly what would be lost between 1985 and 1990 under a "CPI minus 2 percent" formula like that in a re-

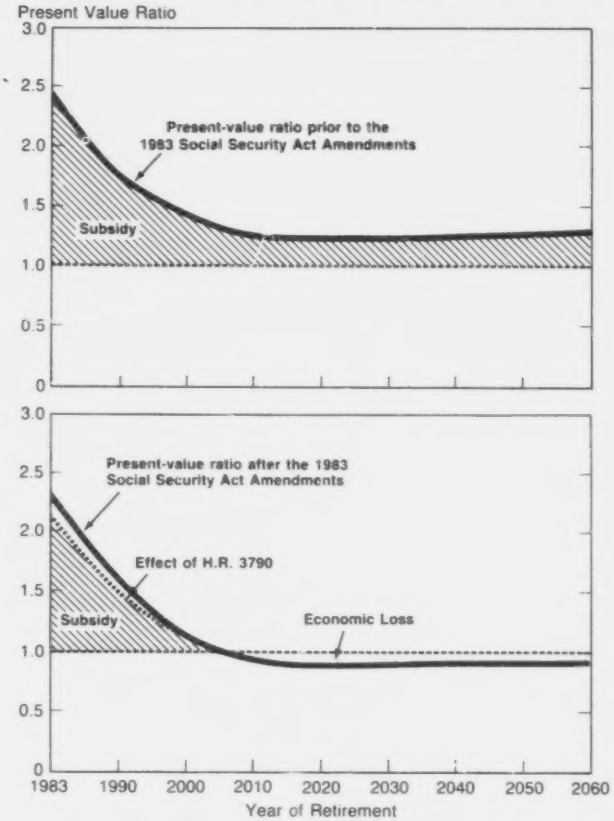
cent House bill H.R. 3790, proposed by Rep. James Jones in August, 1983.

Second, a careful examination of some of the long-run effects of the new social-security law make it clear why it may be appropriate to cut back COLA adjustments for current beneficiaries, and why it may soon be impossible to view social security as a separate system outside the budget. Prior to the Social Security Act Amendments of 1983, the relationship between lifetime social-security tax payments and lifetime benefits (all discounted to "present values") was such that the average worker could expect to get more out of the system than he and his employer had contributed.[2] This was not just a temporary, transitional phenomenon that would disappear once the system had matured; rather, a *permanent* subsidy was built into the system. (See top panel of accompanying chart.) This just could not continue if the system was to remain self-financed.[3]

We estimate that the recent amendments included a small reduction in the returns on employer-employee taxes for a 1983 retiree, but the largest changes were made in the returns for retirees after the year 2010—individuals who either entered the work force after 1965 or will enter the work force in the future. Starting with 2006 retirees, an average wage earner can expect to receive a present value of benefits that will be less than the present value of taxes. (See lower panel of chart.) This means that, under present legislation, social security will be a "bad" investment for average wage earners who retire after 2005. By contrast, wage earners retiring prior to that year will still receive subsidized benefits. Since current beneficiaries are still receiving returns on benefits that are well in excess of the value of their lifetime employee-employer contributions, it is difficult to make a persuasive argument that a slight reduction in these subsidies is unfair. The "CPI minus 2 percent" formula in H.R. 3790 would lower the subsidy and flatten out the curve somewhat, but the subsidies to current beneficiaries would still be substantial.

A second message to be derived from the analysis of present values of benefit-to-tax ratios is that social security, as a self-financed and isolated social-insurance system, is unlikely to survive in the long run. Public support for the system is likely to erode as people realize the poor return they will be getting on their contributions. (Surveys show that even though social security has been paying enormous

Present Value Ratios of Lifetime Social Security Benefits to Lifetime Employee-Employer Tax Payments



Note: Figures were estimated under the intermediate scenario in the Social Security Administration's *1983 Trustee Report* for a retiree with average lifetime earnings who is single or has a working spouse who qualifies for benefits independently.

Source: "The Social Security System after the 1983 Amendments" by Peter Skaperdas and James Capra, paper delivered at the annual meeting of the Western Economic Association, July, 1983.

subsidies to its beneficiaries since its inception, many people are still under the impression that they do not get their "money's worth." One can only speculate what the surveys will show when people in fact do *not* get their "money's worth.") Thus, even though the new legislation technically takes social security "off budget" in 1990, it is clear that the system will be lumped together with other government expenditures at some point, and decisions on social security will have to be made within the context of decisions about the level and composition of *all* government spending.

Cutting back on COLA's for social security and related programs is one of several "across-the-board" options for the budget. With the new prospective payment system for medicare, the Congress has now given itself a vehicle for applying something resembling a freeze or "CPI minus 2 percent" to most of the fees the government pays under the hospital insurance program. Freezes or caps on federal pay raises have been implemented often over the past decade. And, on the revenue side, some change in income-

[2]These figures are based on James R. Capra, Peter D. Skaperdas, and Roger M. Kubarych. "Social Security: An Analysis of Its Problems." *Quarterly Review*, Federal Reserve Bank of New York, Autumn, 1982.

[3]Some theoretical research had at one time suggested that such a Ponzi-like scheme in a pay-as-you-go social insurance program could continue forever, but that work was based on the assumptions of steady rates of population and productivity growth. The real world, where there are wide year-to-year fluctuations in the rates of population and productivity growth, is simply not consistent with those theoretical models, making them at best useless and at worst misleading for policymakers.

Table 3: Long-Range Economic Assumptions Used in Social Security Trustees' Scenarios: II B ("Intermediate Pessimistic") and III ("Pessimistic")
(Percent, annual rate)

Calendar Year	Real GNP Growth		Inflation Rate		Unemployment Rate	
	IIB	III	IIB	III	IIB	III
1990	3.0%	2.7%	4.0%	5.0%	6.5%	7.4%
1991	3.0	2.6	4.0	5.0	6.2	7.0
1992	3.0	2.5	4.0	5.0	5.8	6.8
1993	2.5	2.3	4.0	5.0	5.7	6.5
1994	2.5	2.0	4.0	5.0	5.6	6.5
1995	2.6	2.1	4.0	5.0	5.5	6.5
2000 and beyond	2.6	2.1	4.0	5.0	5.5	6.5

Source: *1983 Annual Report—Federal Old-Age and Survivors Insurance and Disability Insurance Trust Fund*, Washington, D.C.: Government Printing Office, June 27, 1983.

tax indexing (now scheduled for 1985) is clearly a viable option.

Freezes and indexing reductions are appealing budget adjustments as deficit-reducing devices for two reasons. First, from a political standpoint they imply fairness in the distribution of the pain from budget restraint, whether or not that is truly the case. Second, they can be implemented rapidly and, consequently, save a lot of money quickly. However, they are not necessarily viable long-run solutions. Since there is a fundamental imbalance in the budget (as will be shown below), indexing can buy time until the intricate details of a plan for restoring balance can be worked out. But it is probably unreasonable to depend on tax-bracket creep, year-in year-out erosion of real social-security benefit levels for rich and poor alike, and a systematic reduction in public support for hospitals to bring the budget back into long-term balance.

The Consequences of Delay—Long-Term Projections

The political difficulty of undertaking the types of changes that would be required in order to substantially cut the deficit leads quite naturally to the question of what will happen if nothing is done.

This is not the place to analyze what happens to the economy if nothing is done. Rather, the objective here is to take a futuristic look at the budget to see if the problem ever corrects itself—or if it simply gets worse. A preliminary analysis is presented here, but even these early results are quite revealing.

A projection of the budgets for the years 2000 and 2025 was done under the Social Security Administration's II-B and III economic and demographic scenarios. These scenarios were chosen not because they are necessarily the most likely—although if one had to choose between them one might well be tempted to select Scenario III. (See Table 3.) The advantage of using these scenarios is that they provide well-known and readily available estimates for three big programs: OASDI, Hospital Insurance, and Supplementary Medical Insurance.

For the two scenarios, the assumptions were no change in the tax laws; something like current services for nondefense spending;[4] and two possibilities for defense:

(1) Real growth equivalent to the economy's real growth rate, so that the GNP share for defense (excluding retirement pay) remains at 6.7 percent.

(2) Or, a continuation of 5 percent real growth through the year 2000, until the GNP share for defense reaches about 9 percent, and then a constant GNP share thereafter.

The estimates for the year 2000 (Table 4) show some moderation in social-security costs under the II-B scenario and slightly higher costs as a share of GNP under the "pessimistic" scenario. In both scenarios, expenditures for

[4]Normally, current services projections assume that discretionary programs like many grants and the operating expenses of the government, including federal pay, are held constant in real terms. While this is a reasonable assumption to use for formulating a short-range baseline, it implies an unreasonably large diminution of government services over a long (20 to 40 year) projection period. For example, under this assumption the GNP share for discretionary grants would fall from 1.2 percent to 0.4 percent.

For this projection, the grants share of GNP was held constant at its projected 1988 level of 1.2 percent. For federal pay, the size of the federal work force was held constant, but average pay was assumed to rise by inflation plus the rate of increase in labor productivity (2.1 percent for II-B and 1.8 for III). While it is true that across-the-board pay raises have not been this generous over the past decade, the combination of pay raises and grade creep resulted in an average rate of growth in real compensation per worker of 1.58 percent over the 1960 to 1982 period.

Table 4: Long-Term Projections of The Federal Budget and Debt as a Share of GNP
(Calendar years)

		Year 2000		Year 2025	
		Based on Social Security Scenario:		Based on Social Security Scenario:	
	1988	II B	III	II B	III
		Percent of GNP		Percent of GNP	
Social security					
Retirement and disability	4.6%	4.3%	4.8%	5.6%	6.8%
Hospital insurance	1.5	2.0	2.7	3.2	6.1
Supplemental medical insurance	0.8	1.0	1.4	1.6	3.0
Civil service and military retirement	1.1	0.9	0.9	0.8	1.0
Other non-means-tested benefits	1.4	0.7	0.8	0.5	0.5
Means-tested benefits	1.9	1.8	1.9	1.8	2.6
Grants to state-local governments	1.2	1.2	1.2	1.2	1.2
Other operations and subsidies	1.4	1.3	1.3	1.3	1.4
Defense[1]	6.7	6.7 to 9.0	6.7 to 9.0	6.7 to 9.0	6.7 to 9.0
Interest on debt	3.9	4.8 to 5.7	5.8 to 6.9	5.9 to 11.2	17.1 to 24.1
Total Outlays	24.6	25.0 to 28.0	27.4 to 30.9	29.0 to 36.3	46.3 to 55.7
Receipts	19.2	20.3	19.6	23.1	21.6
Deficits	5.4	4.7 to 7.7	7.8 to 11.3	5.9 to 13.2	24.7 to 34.1
Federal debt	**42%**	**65% to 78%**	**75% to 91%**	**89% to 170%**	**240% to 340%**

[1]The range is determined by (a) if defense grows as fast as GNP in real terms after 1988 (low end) and (b) if defense grows by 5 percent in real terms each year (upper end). This range for defense expenditures in each scenario results in a range for interest costs, total outlays, and the deficit.
Source: James R. Capra.

medicare (Hospital Insurance and Supplementary Medical Insurance) rise significantly. Interest costs would continue to climb as a share of GNP, even though nominal interest rates fall to only 6.1 to 6.6 percent. By the year 2000, the deficit could still be about 5 percent of GNP under the more optimistic case, or could rise to between 8.1 and 11.6 percent of GNP under Scenario III, depending on the assumption for defense.

By the year 2025, the annual deficit could be completely out of control, as shown in Table 4, with figures for the budget deficit as a percent of GNP moving up possibly well into double digits, depending on the economic and demographic scenario and how much defense is allowed to increase during the 1990's. Entitlements like social security and medicare play an important part in the projected long-range growth of the deficit. But the acceleration in the growth of interest costs is most important. Although nominal interest rates are assumed to be below GNP growth rates throughout the period, it turns out that there is a massive buildup of debt, because the budget runs large deficits even after excluding interest payments. This buildup of federal debt causes the debt-to-GNP ratio to rise and interest costs to increase along with that ratio. The possibility of just such a "blowup" of interest costs has been raised by some economists, such as James Tobin and Albert Ando, but this is the only example I have seen of calculations that try to show the order of magnitude of the numbers.

Recently, Benjamin Friedman (a professor at Harvard University) has used stock-flow analysis in addition to the typical flow-flow analyses (like that done earlier in this paper, in which deficits are compared to the flow of saving) to argue that deficits could pose a serious problem for future capital formation.[5] Friedman points out that the ratio of *total* nonfinancial debt to GNP has been remarkably stable at about 1.45 since the 1920's, even though the composition of that ratio has varied considerably. He shows that the ratio of Federal Government debt to GNP fell from about 60 percent in the early 1950's to about 20 percent in the late 1970's. Recently, the Federal Government ratio has been climbing and was about 35 percent at the end of fiscal 1983. By 1988, this ratio is projected to rise to 42 percent (see bottom line, column 1 in Table 4).

One of the advantages of the stock-flow analysis in a long-term context is that it gives some indication of the cumulative effects of running large deficits over many years.

[5]Benjamin Friedman, "Implications of the Government Deficit for U.S. Capital Formation" in *The Economics of Large Government Deficits*, Conference Series #27. Federal Reserve Bank of Boston, 1984.

These figures may be more important than annual deficits for examining the effects of budgetary imbalance on capital formation. Large changes in debt-to-GNP ratios, like changes in the size and composition of the capital stock, do not happen overnight. But small changes can accumulate and have a powerful effect on the kind of economy future generations will find.

The projected federal debt-to-GNP ratio in the year 2000 would be 65 percent under the most optimistic of the four long-range projections, and 91 percent under the most pessimistic one (see last line in Table 4). If Friedman is right that there is little reason to expect the ratio of *total* nonfinancial debt to GNP to grow much above its long-run average of 1.45 (i.e., 145 percent), then my projection of the federal debt-to-GNP ratio implies that private nonfinancial debt would be squeezed down considerably over the next 15 to 20 years. Both mortgage debt and debt incurred for new business investment would probably be affected.

By the year 2025, the federal debt-to-GNP ratio would range from a low of 89 percent to a high of 340 percent, depending on demographic and defense assumptions (see last line of Table 4). This result represents the type of inconsistency between budget projections and economic assumptions that make such long-range projections useful—not as forecasts of what is going to happen, but as devices for demonstrating that there is no way for the economy to grow at the assumed rates if the budget remains on automatic pilot and significant budget action continues to be postponed.

The purpose of these long-range projections (especially the 2025 estimate) is not to make a prediction: No one can foretell what policies and external shocks will come to pass over the next 50 years. Rather, these calculations represent another way of showing, first, that the problem of large deficits is not a temporary one; second, that there is a very good chance that it will get worse unless something is done; and, finally, that doing nothing would have grave consequences for the long-run future of the U.S. economy.

The Composition of The Federal Budget[1]

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This paper discusses the composition of the federal budget (Table 1) and assesses the potential for achieving major deficit reductions through further cuts in spending. The budget outlook is discussed in terms of basic categories:

National defense and international spending, which the Administration—and to a large extent the Congress—have made high-priority areas.

Entitlement benefits, largely benefit payments to individuals that occur automatically under existing laws that specify the conditions of eligibility and the rates of payment. This category has been divided into two parts. The first is entitlements where further legislative action is unlikely or very difficult to achieve because of widespread feelings that the programs have been cut enough or are otherwise politically sacrosanct. The second entitlement category consists of medicare, federal employee retirement, and farm-price supports.

Other domestic spending consists largely of grants to states and localities, direct federal discretionary programs, and offsetting collections from natural resource and other activities.

Net interest, which can be reduced only indirectly through lower interest rates or lower deficits.

Priority Areas Targeted for Increases

This category of spending comprised more than one-quarter of the budget in fiscal year 1983. It includes spending for national defense and international affairs, and incorporates as the national defense estimate the amounts in the Congressional Budget Resolution of June, 1983. Although these Resolution estimates are about $20 billion below the Administration's July, 1983, policy estimates, they nevertheless reflect real increases averaging about 5 percent per year over the fiscal 1984 to 1985 period. Increases in international affairs expenditures over the 1983 levels are caused primarily by increases in security assistance. (See Table 2.)

Entitlements Legislation Unlikely or Difficult To Achieve

Table 3 (page 28) identifies the items included in this category, and compares current services and Administration policy estimates. The Administration's proposals are only slightly below current services levels. During the past three years, the Congress has enacted reforms in almost all major entitlement programs.

More specifically:

- Social security was reformed with considerable difficulty in the Spring of 1983 through a major bipartisan effort. It is unlikely that further significant cuts will be enacted in the near future. Indeed, the Congress is considering legislation that would reverse some of the recently enacted reforms to disability benefits.
- Significant reforms to unemployment compensation were enacted in the 1981 Omnibus Reconciliation Act. To the extent that further changes are enacted, they are likely to be short-term *liberalizations* of extended benefits (as occurred in 1983), rather than benefit reductions. Unemployment compensation is projected to decline from 1983 levels because of improvements in the economy.
- Means-tested entitlements include medicaid, nutrition assistance, housing assistance, AFDC, SSI, and several smaller programs. Growth in these programs declined

Table 1: Composition of Budget Outlays
($ Billions)

	Fiscal 1983	
	Amount	Percent of total
Priority areas targeted for increases:		
National defense and international affairs	$219.5	27.6%
Domestic programs:		
Entitlements where further legislative action is unlikely or difficult to achieve	314.4	39.5
Other entitlements	92.2	11.6
All other domestic programs	82.2	10.3
Net interest	87.7	100.0
Total[a]	$795.9	100.0%

[a]Details may not add to total due to rounding.
Source: Office of Management and Budget.

[1]The views expressed in this paper are those of the author and should not be attributed to the Office of Management and Budget (OMB). The paper was prepared with the assistance of Tom Cuny, Larry Hush, Susanne Lind, and Barbara Torrey.

Table 2: Priority Areas Targeted for Increases
(Fiscal years, $ billions)

	1980	1981	1982	Prelim. 1983	Projection 1984	Projection 1985
National defense	$135.9	$159.8	$187.4	$210.5	$240.0[a]	$265.3[a]
International affairs	10.7	11.1	10.0	9.0	13.1[b]	13.0[b]
Total	$146.6	$170.9	$197.4	$219.5	$253.1	$278.3

[a]Budget Resolution, June, 1983.
[b]Mid-Session Review (July, 1983) current services levels.
Sources: Office of Management and Budget, U.S. Congress.

Table 3: Entitlements Where Further Legislative Action is Unlikely or Difficult to Achieve
(Fiscal years, $ billions)

		1984		
	1983 Actual[1]	Current Services[2]	Administration Proposal[3]	Difference
Social security	$169.9	$178.0	$178.0	—
Unemployment compensation	31.4	21.8	21.8	—
Means-tested entitlements	69.9	71.3	68.4	-2.9
Veterans programs (includes nonentitlements)	20.9	21.7	21.6	-0.1
General revenue sharing	4.6	4.6	4.6	—
Railroad retirement	6.2	6.3	5.9	-0.5
Student assistance	6.6	6.2	6.0	-0.1
Other payments for individuals (rural housing, black lung, etc.)	4.9	4.7	5.5	0.8[3]
Total	$314.4	$314.5[a]	$311.8	-2.7[a]

[1]Preliminary
[2]From the Mid-Session Review of the 1984 Budget issued July 25, 1933.
[3]Consists of an increase for rural housing benefits payments which was offset by cuts in other rural housing programs.
[a]Details do not add to totals due to rounding.

sharply in 1982 as a result of policy actions, but there is a general consensus in Congress that these programs have been cut significantly and, therefore, further major reductions are unlikely. In fact, the fiscal 1984 congressional budget resolution called for modest increases for most of the programs, although the increases were not finally enacted.

- Veterans' programs generally have a strong constituency. It is usually difficult to find politically acceptable cuts.
- General revenue sharing has been reauthorized for three years (through September, 1986). Changes are very unlikely during this period.
- The enactment of the negotiated reforms to the railroad retirement system in 1983 means no new action is likely to be taken anytime soon.
- Student assistance reductions were enacted in 1982, but Congress has resisted further cuts since then.
- Other payments for individuals are relatively small or serve constituencies that have considerable support.

This category accounted for almost 40 percent of total budget outlays in fiscal 1983. Excluding the social security cuts, which are included in the July current services estimates, the Administration proposed reductions of only $2.7 billion (net) for fiscal 1984, or less than 1 percent of the category total. And these reductions were concentrated in the area of means-tested entitlements, where the Congress has been reluctant to enact further reductions.

Other Entitlements

This category includes medicare, federal employee retirement, and farm-price supports.

The largest of these programs is medicare; both its size and its recent growth rate of 18 percent annually suggest a need for reductions. However, outlay reductions can be

Table 4: Other Entitlements
(Fiscal years, $ billions)

	1983 Actual[1]	1984 Current Services[2]	1984 Administration Proposal[2]	Difference
Medicare	$52.5	$61.4	$59.8	-1.6
Federal employee retirement	20.9	22.7	22.4	-0.3
Farm-price supports[3]	18.8	13.7	10.8	-2.8
Total	$92.2	$97.8	$93.0	-4.8

[1]Preliminary.
[2]From the Mid-Session Review of the 1984 Budget issued July 25, 1983.
[3]The major difference between current services and Administration policy is due to the payment-in-kind (PIK) program, which has been achieved administratively. Congressional estimates of farm-price supports include these savings in the baseline.

achieved only by requiring the beneficiaries (who are aged and/or disabled) to share more of the costs, or by reimbursing hospitals and doctors at lower rates. The cost savings of the new hospital reimbursement system—using 467 diagnostic-related categories—are already reflected in the current services estimates. Additional reductions in hospital reimbursements are unlikely while this new system is being put into effect over the next several years. The reconciliation directive enacted in 1983 did assume further cuts in medicare. Legislation achieving cuts (of less than $1 billion per year) was reported by both House and Senate committees, but failed to be enacted because of disputes over tax increases.

The Administration proposal for federal employee retirement pay would combine reductions in benefits with increases in employee payroll taxes. A delay in cost-of-living increases from May, 1984, to January, 1985, which was part of the ill-fated 1983 reconciliation package, may be reconsidered when the Congress returns. Some additional savings may be possible here, but large savings are not likely until after the issues surrounding the integration of federal employee retirement with social security are resolved.

Farm-price supports are largely the result of weather and crop conditions and the prices of agricultural commodities. It is not clear that major new savings—beyond those that the Administration has already implemented—can be enacted in this area. (See Table 4.)

All Other Domestic Programs

This category comprises only 10 percent of the budget. About half of the outlays are for federal aid to states and localities not included in entitlements. Included here are grants for physical capital improvement (such as highways, sewage treatment plants, mass transit, and community development); the remaining grants are largely for education, training, employment and social services.

The remaining direct federal activities include support for science and technology and health research; law-enforcement activities involving the FBI and Coast Guard; the Internal Revenue Service; natural-resource activities, including receipts from the sale of oil and gas leases on the Outer Continental Shelf; and a variety of other activities.

Table 5 on page 30 shows outlays for these programs in current and constant (FY 1982) dollars. In constant dollars, current services outlays for 1985 are estimated to be $76 billion, about one-third below the 1980 level.

The grants-in-aid portion of this category for fiscal 1985 is estimated to be 29 percent lower than in 1980 in constant dollars. Grants for major physical capital improvements are estimated to increase from 1983, reflecting increases in highway and mass-transit spending under the Surface Transportation Assistance Act of 1982. Other grants, almost entirely for human services, are estimated in fiscal 1985 to be 36 percent below the 1980 level in constant dollars.

Proposals for further reductions in grants-in-aid are consistent with the Administration's policy of reducing the federal role in these domestic programs. As the economy and the fiscal outlook for states and localities improve, there may be room for some further reductions in grants, but the large reductions that have been enacted in the last two years suggest that further large cuts will be difficult to achieve.

Direct programmatic federal spending on a current-services basis in this category for 1985 is estimated to be more than 30 percent below the 1980 level in constant dollars. Additional proposed reductions are also unlikely to be large enough to have a significant impact on the deficit.

Net Interest

This category of the budget is expected to grow sharply in the near future—even assuming some decline in interest rates—because of the large projected budget deficits. Bor-

Table 5: All Other Domestic Programs[1]
(Fiscal years, $ billions)

	1980	Preliminary 1983	Current Services Estimates 1984	1985	Percent Change 1980-1985
Current dollars					
Grants-in-aid:[1]					
For major physical capital improvements	$23.8	$21.1	$25.8	$26.3	10.5%
Other grants	26.4	21.2	23.4	24.1	-8.7
Subtotal	50.2	42.3	49.2	50.4	0.4
All other programs:					
Programmatic spending	51.8	50.4	51.0	50.9	-1.7
OCS rents and royalties	-4.1	-10.5	-10.2	-9.5	131.7
Total	$97.9	$82.2	$90.0	$91.8	-6.2%
Constant (FY 1982) dollars[2]					
Grants-in-aid:					
For major physical capital improvements	$28.0	$19.9	$22.8	$21.9	-21.8%
Other grants	31.3	20.0	20.7	20.0	-35.7
Subtotal	59.1	39.9	43.5	41.9	-29.1
All other programs:					
Programmatic spending	61.0	47.5	45.0	42.3	-30.7
OCS rents and royalties	-4.8	-9.9	-9.0	-7.9	64.6
Total	$115.2	$77.5	$79.5	$76.4	-33.7%

[1]Excludes entitlement grants included in previous tables.
[2]Deflated using the GNP deflator (FY 1982 = 100).

rowing of $200 billion a year at current interest rates adds close to $20 billion to annual interest costs. This is a rather staggering figure when one contemplates how difficult it would be to offset this increase with programmatic reductions in other parts of the budget. And with sustained large deficits, one would have to find additional new reductions every year just to keep from losing ground in the battle to restrain federal spending.

* * * *

Much has been done in the last two-and-one-half years to pare back nondefense federal spending significantly. But the pattern of reductions over time—large reductions in 1981, moderate reductions in 1982, and very small reductions in 1983—suggests that further cuts will be difficult to achieve.

If major reductions in federal spending are to be made, they will clearly have to be broad based and comprehensive. To say that is not to endorse across-the-board freeze policies that are so often politically attractive, but it is to say that no major component of the budget can realistically be excluded from the budget knife if major progress is to be made in further reducing federal spending.

Federal Deficits, Debt and Budget Policy[1]

by Ronald Hoffman
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There is much current discussion about the potential disadvantages of the large projected deficits. These perceived risks include, among others, the following:

(1) Interest-rate increases that cause short-run reductions in aggregate demand and longer-run reductions in the rate of capital accumulation and economic growth;
(2) Federal interest payments that grow to require ever more federal borrowing to meet them;
(3) The expectation that the increased pressure of an ever-growing federal debt would lead the Federal Reserve to monetize the deficit and thus reignite inflation.

The analytical discussion of the potentially harmful interest-rate effects lodged in the large deficits is motivated, in part, by a lack of consensus as to whether an increase in taxes would reduce the emerging risks. This disagreement reflects the fact that neither theoretical nor empirical analysis provides a clear-cut guide for decisions about either the urgency of reducing the deficits or the advisability of raising taxes to do so. In addition to the analytical discussion there is, of course, a political debate about the appropriate policy response to the projected deficits.

In the following remarks, I will sketch the theme that whatever the short-run cyclical risks may be—and in my opinion they are relatively minor—the major area of concern is the longer-run negative implication that the projected path of large prospective deficits has for capital accumulation and real economic growth.[2] This theme emanates from the recent research of several economists who (although they approach the subject from seemingly diverse angles) reach conclusions with enough similarity to indicate a consensus. In my view, these results suggest that we should look to some longer-run policy changes that might alleviate the problem. These longer-run policy suggestions look relatively promising in the context of the reality of a short-run policy stalemate, generated by a gridlock of contesting political forces.

[1]These remarks express the personal views of the author and do not necessarily imply, reflect, or represent U.S. Treasury Department policy. However, the author has benefited substantially from participating in collaborative work on this subject with Jacob Dreyer, James Girola and Manuel Johnson at the Treasury. Of course, they are not responsible for any views expressed here.

[2]To focus on the real, domestic aspects of the matter, I abstract inflation and the international dimensions of the problem from explicit consideration. These important issues are beyond the scope of this paper.

What Can Be Read from The Deficit?

The current debate is often pursued only in terms of the deficit, perhaps because of an analytical tradition of (mis)using one or another version of the deficit as a fiscal-policy instrument. However, the budget deficit is simply a residual, measuring the difference between the outlays and revenues that results from federal taxing and spending programs. As a residual, the actual annual deficit cannot be expected to provide unambiguous information about the macroeconomic effects of fiscal policy.

Contrary to some opinions, the macroeconomic effect of government deficits—often put in terms of the effect on prices of goods and services, and, especially, interest rates—is not unambiguous. The outcome depends importantly on the assumption made about the extent to which government bonds are perceived as wealth, and thus about the saving behavior of the private sector. Other factors that exert crucial influence on the outcome are the extent to which: the economy is deviating from its long-run expansion path; the deficits are financed by monetization of the debt or by sale of government debt to the public without creating new money; government debt is an attractive investment for foreigners; the deficits (as measured from some baseline) are caused by spending increases or tax cuts; a tax cut reduces marginal tax rates, thus improving incentives to supply productive labor and capital; and the outlays financed by the deficits change the composition of government spending. The results are also influenced by the share of GNP devoted to federal expenditures; by the magnitudes of the private sector's various responses to the specifics of the policy changes; and by a host of institutional arrangements determining the adaptability of labor, product and asset markets to changing economic conditions.

But even taking account of these sources of ambiguity leaves open the question of the definition and measurement of the deficit that is appropriate to the analysis. The so-called passive deficit, which is the result of below-trend economic activity, is typically distinguished from the so-called active (i.e., actual) deficit, which reflects deliberate policy changes in addition to the automatic responses of outlays and taxes to changes in unemployment and inflation rates. The difference is known, generically, as the

cyclically adjusted deficit. Also, there is growing recognition that the relationship between the deficit and interest rates, investment and growth is analyzed best in real rather than nominal terms; thus, we are interested in the real deficit.

Further, the annual deficit (whatever variety) is a flow that reflects the difference between outlays and tax receipts during a specific year. But, obviously, an accumulated stock of federal debt is generated by annual deficits. Federal debt competes with private (and other public) debt for a share of the available stock of credit, and thus the process of portfolio allocation can influence the rate of capital accumulation. In analyzing this process, the real, rather than the nominal, debt deserves attention.

The Short Run: Will Deficits Inhibit The Recovery?

Before considering the effect of cumulating deficits on longer-run growth, I will explain briefly my reason for playing down the risk that deficits will damage or inhibit the recovery. The argument behind the assertion that high current deficits will prevent or abort the ongoing economic recovery is that big deficits cause high interest rates; high interest rates depress expenditures for output of interest-sensitive industries; and the economy cannot recover unless those industries recover.

Without going into detail about why the relationship between deficits and interest rates remains questionable, one can grant the assumption that big deficits do cause high interest rates, and argue correctly that the assumption does not necessarily imply a slowdown of the recovery. Reduced demand for some categories of output may be more than offset by larger expenditures for other categories of output (such as consumption of nondurables, or defense spending). The strength of recovery depends on *total* production and sale of goods and services, rather than of particular categories of goods and services. A "passive" (i.e. cyclically induced) deficit substitutes for reduced private spending during an economic decline, while an "active" deficit adds even more to total spending and thus aids the recovery to proceed apace. Depending on economic conditions (including the rate of money growth), the current deficit may put some upward pressure on interest rates or other prices. This would tend to indicate that there is more than enough, rather than too little, aggregate demand relative to the available supply of goods and services. By contributing to upward pressure on the interest rate, the deficit also contributes to a bias in the composition of total demand—against the output of interest-sensitive industries, such as, for instance, housing. (A continual shift away from the interest-sensitive sectors could affect the nation's long-run economic performance.)

Another assertion is that large expected *future* deficits will abort the recovery. This assertion argues that future deficits make expected future interest rates high, thus keeping present long-term interest rates high, because people will not lend long term at rates that are substantially below the rate they expect to obtain several years from now. The nominal-rate version of this argument implies, incorrectly, that investment depends on nominal rather than real rates. It also relies on the questionable assumption that prospective deficits cause expected inflation (which then raises nominal interest rates). The real-rate version relies on the questionable assumption that there is an asymmetry in the current perceptions of lenders and borrowers regarding the effects of projected future deficits.[3] And it fails to recognize that erstwhile long-term lenders would move funds into shorter-term securities.[4]

Longer-Term Effects of Deficits

Even if the projected deficits do not pose much of a threat to this recovery, there is a risk that in the longer term the share of GNP allocated to private capital formation will be reduced, and real economic growth will thereby be inhibited. To the extent that an annual real deficit absorbs a larger share of annual real savings, and unless there is a balancing increase in the savings rate, there is less available to finance enough investment to maintain even a constant capital-to-output ratio. And, more importantly, persistent deficits accumulate a stock of federal debt that may grow faster than GNP and may absorb an increasing share of the stock of total outstanding credit (debt) relative to GNP. In addition to its potential for slowing growth, an incessant buildup of the federal debt-to-GNP ratio breeds the fear of, and the potential for, higher inflation.

In assessing these risks, and the amount of time it might take for them to materialize, it is important to use an appropriately specified and accurately measured concept of the deficit and the debt. The annual real deficit is the annual change in the real market value of the stock of federal debt.[5] Analysts customarily put the nominal deficit into real terms by deducting the product of the amount of publicly held federal debt multiplied by the inflation rate (i.e. the fixed-weight GNP deflator). To the extent that interest payments on the debt include an inflation premium equal to the inflation adjustment of the debt (i.e., a debt-depreciation component), and to the extent that debt holders regard this additional interest payment as a return of principal (rather than income to be consumed), the reinvestment of the ad-

[3]Such asymmetry would imply, for example, that a given individual would have one forecast when acting as a borrower and a different forecast when acting as a lender, all other factors considered the same.

[4]It is possible that even a symmetrically perceived increase in uncertainty about monetary and fiscal policy could result in a reduction in the extent to which investment is financed by long-term debt, and a decline in the maturity structure of new issues may have an adverse effect on the size and composition of the capital stock.

[5]The discussion here abstracts from other measurement issues including the difference between the NIA and unified budget concepts; the advisability of relating the absolute size of the deficit to a measure of the size of the economy (such as GNP or population); and adjustments for cyclical effects.

ditional interest will finance, without "crowding out," an equal amount of deficit.[6]

In addition, in estimating the macroeconomic effects of the financing of government expenditures during a period of fluctuating interest rates, it may be important to convert the value of the debt from par value to market value. For example, in a period of historically high and rising interest rates, the stock of debt would be valued lower at market than at par, thus lowering the debt-to-GNP ratio and the deficit.

With these data refinements in mind, let us consider the implications that some astute observers draw from projections of the debt-to-GNP ratio. Benjamin Friedman (a professor at Harvard University) has assembled figures to show that there is a risk that prolonged deficits will enlarge the federal debt enough to impinge seriously on the ability of U.S. nonfinancial borrowers to obtain credit. He notes that the economy's total debt-to-GNP ratio has remained relatively constant (displaying no trend and little cyclical fluctuation) since the end of World War II.[7] However, despite the relative stability of the total, the components—the private-sector debt-to-GNP ratio and the Federal Government debt-to-GNP ratio—fluctuate. Although neither component shows a stable relationship to GNP, their movements have been offsetting so the total has remained a rather constant 145 percent of GNP.

The federal debt-to-GNP ratio has declined from 103 percent in 1946, to 63 percent in 1953, to the 24 to 29 percent range during the 1970's and until 1982 (as compared to the 27 percent rate in 1918). The declining trend stopped in the mid-1970's, has turned up in 1983, and Friedman projects it to rise further through 1988.

Given the rather constant total debt-to-GNP ratio, the rise in the federal-debt ratio implies a falling private debt-to-GNP ratio. For perspective, in the 1956 to 1980 period, the nonfinancial corporate business sector (which accounts for about three-quarters of U.S. plant and equipment investment) used borrowing to fund about 64 percent of its net financial requirements. Thus, Friedman concludes that in the absence of a major change in financing patterns, the buildup of the federal debt-to-GNP ratio implies less debt available to finance the private capital accumulation necessary to increase the nation's capital intensity (the capital stock-to-total output ratio).

Frank de Leeuw and Thomas Holloway (economists at the Bureau of Economic Analysis) also explore the buildup of federal debt resulting from sustained deficits.[8] Their analysis is more elaborate and their conclusions are more detailed than Friedman's, but essentially they arrive at the same position: A growing federal debt-to-GNP ratio signals that private capital formation is in danger of being crowded out. They focus on the market value of the stock of publicly held federal debt because the stock of government securities, not the current deficit, is a substitute for capital stock in the public's asset portfolio (the deficit-to-GNP ratio need not even move in the same direction as the federal debt-to-GNP ratio). They adjust the observed data for cyclical fluctuation in order to relate the growth trend in the federal debt to the growth trend in GNP. It is this relationship that is important for the analysis of productivity and growth.

Their estimates indicate that increases in the cyclically adjusted federal debt-to-trend GNP ratio during 1981 to 1983 were due, about equally, to the differential between the interest rate on federal debt and the GNP growth rate, and to explicit policy decisions concerning federal receipts and expenditures. The major policy decisions were cuts in personal and corporate taxes, and increases in defense spending. They project that, during the period 1983 to 1988—under a wide range of assumptions about interest rates, GNP growth rates, and budget decisions—the cyclically adjusted federal-debt-to-trend GNP ratio will range between 31.6 percent (slightly below the present 32.1 percent) and 43.7 percent.

These results are similar to those in the paper Preston Miller has prepared for this volume. Miller's analytical approach—a simplified steady-state growth model—and his emphasis on inflation risks differ from the Friedman and the de Leeuw-Holloway approaches. But a reader can take (dis)comfort in the fact that these seemingly different analyses are consistent with the conclusions that the capital-output ratio in the long run is related to the ratio of debt to GNP; that a prolonged increase in the federal debt-to-

[6]Phillip Cagan ("The Real Federal Deficit and Markets," *The AEI Economist*, November, 1981), notes that the additional interest due to inflation (the inflation premium) will be larger or smaller than the depreciation in the value of the debt, depending on whether expected inflation at the time the debt is issued (the basis for the inflation premium) is too high or too low a forecast of actual inflation. Thus, a proper measure of the deficit would not exclude the entire decline in the real value of the debt. Rather, only the extra interest viewed by lenders as repayment of principal (and thus available to finance new federal deficit without absorbing new saving) should be excluded. In other words, the deduction from the interest cost of servicing the debt should equal the amount of the so-called Fisher effect (i.e., the inflation premium in nominal interest rates, reflecting inflation expected over the life of the debt instrument). This adjustment is difficult because it depends on unobservable expectations of inflation.

[7]Benjamin Friedman, "Implications of the Government Deficit for U.S. Capital Formation." *The Economics of Large Government Deficits*, Conference Series #27. The Federal Reserve Bank of Boston, 1984. By focusing on the debt-to-GNP ratio, Friedman adjusts for actual inflation rather than properly accounting for expected inflation. It is not clear whether he makes a par- to market-value adjustment, but his main conclusions deserve consideration, nevertheless.

[8]Frank de Leeuw, and Thomas M. Holloway, "Measuring and Analyzing the Cyclically Adjusted Budget," *The Economics of Large Government Deficits*, Conference Series #27. The Federal Reserve Bank of Boston, 1984. Based on the mean level of real GNP during each middle-expansion phase of the cycle, placed at the center of that mid-expansion, they estimate a "mid-expansion trend GNP path," which removes cyclical fluctuations but preserves the average level of real GNP over the period 1953 to 1980. Based on this trend path of real GNP they estimate a time series of the cyclically adjusted real federal debt at market value. However, they assume that expected inflation is equal to the inflation that actually occurs.

GNP ratio is reason for concern about capital accumulation and/or inflation; and that a crucial element in the analysis is whether the real interest rate is greater or smaller than the growth rate of real GNP.

The last factor, the relationship between the real interest rate and the real GNP growth rate has been emphasized in previous work by Miller and his colleagues at the Federal Reserve Bank of Minneapolis, Thomas Sargent and Neal Wallace.[9] They point out that instability can arise if federal expenditures, excluding interest payments on the federal debt, are a larger share of GNP than are federal tax receipts (that is, a "primary deficit" exists), and if the interest rate on the federal debt exceeds the growth rate of GNP. In this case, interest payments on the federal debt become a progressively larger share of GNP. The federal debt-to-GNP ratio rises because of the need to finance the persistent primary deficit and the ever-growing interest bill.

As this process continues, so does the pressure to monetize the debt. (Mickey Levy emphasizes this issue in his paper in this volume.) Monetization would bring inflation, which would reduce the real value of the debt and thereby reduce the real value of interest payments on the debt. But inflation could accelerate unless expenditure reductions and/or tax increases reduced the primary deficit and allowed the monetization process to stop.[10]

Further confirmation of these results, and a ray of optimism about the time period available for policy adjustments to avoid serious harm to the economy, was provided by Professor James Tobin at a 1982 Conference Board colloquium.[11] Tobin analyzed the dynamics of federal deficits and debt (using a model similar to the one examined by Miller, Sargent and Wallace) focusing on the growth of the federal debt-to-GNP ratio and the crucial relationship between the real interest rate on federal debt and growth rate of real GNP. Assuming reasonable values for the parameters in the model, Tobin estimates the path of the federal debt-to-GNP ratio for various periods from 1952 to 1981. For example, for the 1980-1981 period, during which real GNP growth exceeded the real interest rate by one percent, he calculates the actual debt-to-GNP ratio to be 26.5 percent. Using the parameter values from that period, he estimates that after five years the ratio would rise to 29.1 percent, and to 31.6 percent after 10 years; and that the hypothetical "stationary" level, at which this ratio would no longer rise, is 80 percent. While rather imprecise, these estimates are consistent with those of de Leeuw and Holloway.

Further corroboration that the disadvantageous aspects of a persistent path of large deficits tend to build up slowly was indicated in a recent analysis by Edward Gramlich (a professor at the University of Michigan). His simulations of a Solow-type growth model, using parameters that are "realistic," suggest that it would take at least 20 years before the present projection of profligacy would begin to take its toll on per capita consumption.[12]

My reading of these analyses suggests that the projected deficits indicate a movement away from an increase in private capital accumulation (although, for example, some federal spending funds loans to the private sector), and in total capital accumulation (although some federal spending is investment rather than consumption). And, although the size of the effect (of reduced investment) on economic growth is debatable, even in the worst case it appears that the economy is not yet at disaster's doorstep. Thus, if appropriate policy adjustments are not possible immediately, there is time to develop more fundamental policy adjustments. But the time to begin working on those is probably now.

Immediate Prospects for Resolution?

About two-thirds of the federal budget is absorbed by defense, social security, medicare and interest payments. But at this time (early December, 1983), it appears unlikely, from what the President and Congress have been saying, that much will be cut from these programs. Other papers in this volume suggest little if any room for trimming in the other one-third of the budget; a view with which I concur. Furthermore, the outlook for a tax increase is murky, and the proposals for tax increases are questionable as growth incentives.

In a November 23, 1983, press release announcing Senate Finance Committee hearings to develop a "deficit reduction package," Chairman Robert Dole cautioned witnesses against proposing unhelpful suggestions, such as freezing social security COLA's.[13] Thus, it appears that social-

[9]Preston J. Miller," Higher Deficit Policies Lead to Higher Inflation," *Quarterly Review*, Federal Reserve Bank of Minneapolis, Winter, 1983; Thomas Sargent and Neal Wallace, "Some Unpleasant Monetarist Arithmetic," *Quarterly Review*, Federal Reserve Bank of Minneapolis, Fall, 1981.

[10]Preston Miller argues that even if the Federal Reserve does not formally monetize the debt, higher interest rates make it profitable to hold interest-bearing assets that are as risk free as money, and that can be used essentially as money in transactions. Thus, the private sector introduces and trades in such instruments and effectively monetizes the debt.

[11]James Tobin, "Budget Deficits, Federal Debt, and Inflation in Short and Long Runs," in A.T. Sommers, ed., *Toward a Reconstruction of Federal Budgeting*, The Conference Board, misc. 83-II, 1983.

[12]Edward M. Gramlich, "How Bad Are the Large Deficits?" *Federal Budget Policy in the 1980's*, Urban Institute, Washington, D.C., 1984. The underlying model is a standard, simple model of economic growth in which increases in output depend upon the rate of growth of the labor force and the rate of accumulation of the capital stock. See Robert M. Solow, "A Contribution to the Theory of Economic Growth," *Quarterly Journal of Economics*, 1956.

[13]Chairman Dole stated: "In formulating deficit reduction recommendations, I hope witnesses will present specific practical proposals that recognize the political realities that will necessarily shape any deficit reduction package. For example, the President and Speaker O'Neill have both categorically rejected reductions in Social Security Cost of Living Adjustments (COLA). Thus, suggestions that we freeze or reduce Social Security COLA's will not be very helpful to the Committee as it seeks to develop a bipartisan package."

security benefit reductions are off-limits, at least until Inauguration Day, 1985.

Similarly, the President has renounced tax increases so frequently that the odds are high that he will continue this opposition, at least until the end of his current term. Administration officials, including Treasury Secretary Regan, have stated repeatedly that (with tax receipts projected at or near historically high levels of 19 to 20 percent of GNP) deficits should be reduced by trimming federal outlays from about 24 or 25 percent of GNP to about 20 or 21 percent. They argue that tax increases may simply buy more spending rather than smaller deficits, citing as an example that the Administration consented to a $100 billion TEFRA tax increase in exchange for the promise of nearly $300 billion in outlay reductions which were not delivered. They argue that a tax increase probably would not be effective in reducing interest rates, that the business or individual income-tax increases most likely to occur would have a direct and adverse effect on saving and investment by reducing after-tax rates of return.

Whether or not an observer finds this argument convincing, there is little reason for doubting the firmness of the position of those who offer it. Indeed, the President's top aides have taken CEA Chairman Feldstein to task for his insistence that taxes be raised—even if only through the contingency tax proposed in the President's 1984 budget—and for his documentation of the downward trend of domestic spending since 1980.

At the same time, although there is some talk in Congress about reducing the growth of defense spending, Secretary Weinberger indicated in early December, 1983, that he would seek a $55 billion increase in the defense budget. Presumably he seeks to restore defense spending to the path proposed prior to the 1984 cuts voted by Congress.

My conclusion is that the odds are low (if not zero) that the President would give much support to a proposal to cut the deficit by a tax increase, or by cuts in social-security benefits or defense spending during the first Reagan Administration. Indeed, as of now, this conclusion seems to be a consensus assumption among those who are currently seeking a best guess.

Similarly, tax-increase proposals do not have significant support in Congress. Both the House and Senate ran into difficulty and suspended work on their respective tax bills until the 1984 session. A quick look at those bills indicates that neither of them is designed to tax mainly consumption rather than saving and investment.

The House bill would raise about $2.4 billion during fiscal years 1984 to 1986, and an additional $6.8 billion during fiscal 1987 to 1988, for a total of $9.2 billion. Of that total, $4.2 billion would come from higher taxes on industrial development bonds—a change that does not favor investment.

The Senate Finance Committee bill is a much more serious endeavor, in terms of the numbers. It would raise revenues of about $75 billion and cut outlays by about $38 billion, thus reducing the deficit by about $113 billion during fiscal years 1984 to 1987. Some of the major revenue items include raising taxes on tax-exempt leasing, income averaging, capital gains, net interest, and energy; a 2½ percent additional tax on corporations; a 2½ percent progressive surcharge on individuals; and a modification of indexing. Again, this list is hardly designed to encourage investment or saving, or to maintain the recent marginal-tax-rate reductions. The major revenue items would take effect January 1, 1985, *contingent* on certification by the Congressional Budget Office before November 16, 1984, that the spending cuts in the package have been achieved and that another $38 billion in spending cuts—to be developed by other Senate Committees—also has been achieved.

The Domenici-Chiles Senate Budget Committee bipartisan deficit-reduction plan would cut the deficit by a total of about $88 billion during fiscal years 1984 to 1986: about $30.3 billion in outlay cuts ($10.2 billion from defense, $5.5 billion from nondefense "discretionary" programs, and $14.6 billion from the 1984 reconciliation bill); and $58 billion in tax increases (including $10.6 billion individual surtax, $5.5 billion corporate surtax, $7.5 billion corporate minimum tax, $4.1 billion investment tax-credit revision, and $13.5 billion from the reconciliation bill). This package was defeated in November, 1983, in the Senate Budget Committee. When that happened, Senator Dole withdrew his Senate Finance Committee bill from the Senate floor.

Thus, it is easy to document weakness in the support for deficit-cutting measures to be enacted in the near term. And it is difficult to suggest forces that would reverse this situation before the next election. The question becomes: What, if anything, might be done, beginning now, to institute more fundamental changes over the longer term?

Suggestions For Longer-Term Adjustments

This concluding section offers some suggestions for a longer-term approach to deficit reduction in a situation where federal spending remains substantially in excess of federal revenues while the latter equal nearly one-fifth of GNP. There is, of course, nothing magical about one-fifth of GNP—the figure simply indicates the relative size of the budget.

Efforts to deal with the problem are hampered by the lack of a national policy about the share of GNP to be allocated to federal spending and the way that spending is to be financed. This observation has been made frequently by Herbert Stein[14], and recently by Senate majority leader Howard Baker. Some have suggested that the problem be "farmed out" to a bipartisan "Deficit Reduction Commis-

[14]See, for example, Herbert Stein, "Controlling the Budget Deficit: If Not Now, When? If Not Us, Who?" *The AEI Economist*, December, 1983.

sion," similar to the Social Security Commission. I would be skeptical that such a commission would accomplish much in the way of defining a national budget policy; in my opinion, the Social Security Commission failed to address major fundamental long-term issues. I see little hope for success if the issue is not addressed directly by the elected political leaders in the normal course of their executive and legislative functions. If the existing budget process is inadequate to support (require) this effort, then work should begin now to improve the process so that it can produce such a policy.

In the event that a tax increase is decided upon, it is important—according to both advocates and opponents of such an increase—to avoid further taxes on saving and investment. But if recent experience is a guide, attempts to raise taxes by making relatively small changes in the present tax structure are likely to favor consumption relative to investment. Thus, it is worth focusing attention now on proposals for more comprehensive revision of the tax code.

Many of the issues central to such proposals were discussed in detail in *Blueprints for Basic Tax Reform* (U.S. Treasury Department, 1977). *Blueprints* offered two alternative proposals. One is a cash-flow tax, which would exclude saving from the tax base and, therefore, would tax consumption. It would move to a marginal tax-rate structure with three brackets, ranging between 10 and 40 percent. Again, the rates could be altered to provide the desired degree of progressivity and amount of revenue. There are a surprising number of important similarities between such a cash-flow tax and the present income tax, so the change would not be as radical as might be imagined.

The other proposal would broaden the existing income-tax base; integrate the corporate and personal income taxes; tax capital gains at full rates after adjustment for inflation; tax other items not (then) subject to tax; and move to a marginal tax-rate structure with three brackets, ranging from 8 to 38 percent. Again, the rate levels could be set to meet the revenue requirements deemed necessary. Another version of a broad-based tax, the Bradley-Gephardt bill (S. 1421 and H.R. 3271), was introduced in the 97th Congress in June, 1983. It would continue to separate corporate and personal taxes; repeal a large number of business and personal tax preferences but allow many others to remain; tax corporate income at 30 percent; and tax personal income according to four marginal tax-rate brackets, with a 30 percent maximum.

Obviously, there are other variations that can be constructed from such basic structures. An attractive feature that is common to such proposals is that they offer an opportunity to improve equity while obtaining efficiency gains—that is, reductions in deadweight losses. Such losses result from the distortion of economic transactions by a complicated tax system with high marginal rates and a sievelike base, and can mount up in a revenue system that yields over $600 billion a year. A national sales, or value added, tax would not provide such an advantage, but it could be focused directly on consumption rather than on investment spending.

This brief mention of rather radical shifts in tax policy should not be interpreted as a suggestion that such changes could be affected quickly, easily, or without transition cost. The point is, rather, that—exactly because such proposals are full of problems that require careful consideration and debate (all of which takes time)—it is important to begin the process without delay.

Cuts in defense spending present complicated problems. I will not offer an opinion about what, if anything, in the military budget may or should be cut. (There is an active debate on this subject.) However, if cuts are to be considered, it is important to provide the necessary lead time. In any given year, the most likely opportunity for cutting defense outlays is to cut operations and maintenance which affect readiness. Such cuts are likely to be relatively small and highly inefficient. In contrast, defense procurement holds more opportunity for larger and more efficient cuts. But cutting procurement outlays requires several years lead time, because a dominant portion results from budget authority enacted in earlier years. Very little saving is achieved by cancellation, delay or termination of projects already under commitment, because of the progress payment and penalty provisions included in defense procurement contracts.

Since the current defense buildup emphasizes modernization and, thus, procurement, the extent to which prior-year obligations dominate current outlays will increase. The share of outlays from prior-years' funding in each year's projected outlays will rise steadily from about 30 percent in 1982 to about 41 percent in 1987. In this situation, any serious effort to lower defense outlays must focus attention on large, multiyear weapons systems before procurement begins. If the target is spending in 1986 and 1987, the examination should begin now.

The short-run financial problems of two major domestic programs, social security and medicare, have been well-publicized, but the debates need to be focused more on fundamentals. Decisions about altering the OASDI benefit structure to account for intertemporal changes in key economic and demographic variables suffer from the lack of comprehensive intergenerational equity policy that involves both costs and benefits in the context of realistic economic constraints. Often the substitute for an equity policy is the practice of "holding everyone harmless," which can be very costly. This practice stems from the concept that once a benefit is provided, the beneficiary is entitled to it forever—because of a social contract. The concept and the practice deserve reevaluation when the cost of a program threatens to become unaffordable and weaken the structure of the economy that must produce the means for supporting the program. But before we start to propose formulas, it may be worthwhile to attempt to establish basic value judgments about the design and public financing of

the major entitlement programs. This is fundamental if we want to be prepared to consider how to renegotiate the social contract if we can no longer afford the existing one.

The health-care issue illustrates the complexities to be faced. Should the eligibility criterion for medicare continue to be age—why not income? In what sense, if any, is medical care a right of the individual? A refinement of our objectives and the costs of reaching them may reveal that only "basic health care" can be considered a right. Is two-class medicine unacceptable within our present social and political framework? Can "basic care" be adequate treatment? What should be the limit on public finance of care for catastrophic illness? It is very difficult intellectually and emotionally to define "adequate care" and to establish such limits. But, if they are not defined explicitly, then program and funding provisions will provide implicit limits. Given the medicare and private health-care projections, such fundamental questions deserve prompt, careful attention.

To end on an optimistic note! It appears that we need a national policy on the share of GNP to be allocated to the federal budget outlays and the method of financing those expenditures. To determine such a policy will require serious reexamination of the tax structure and of certain major expenditure programs. If the current budget deficits provide the impetus for this effort, the current fiscal situation may turn out to be a bargain.

An Inflation Tax: An Easy Way Out?[1]

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Introduction

Throughout most of the post-World War II period, and particularly since the mid-1960's, the structural budget deficit has grown gradually, but persistently, larger. This is true both in absolute dollar terms and relative to the size of the economy. The structural deficit is the deficit as it would be if we could capture only the budget effects of discretionary tax and spending policies, without including the automatic effects of economic change. In some sense, the structural deficit should be the "policy" deficit of the Federal Government, reflecting only the budget consequences of explicit changes in program purchases, eligibility, tax rates, and the size of the tax base. A "policy" deficit would be due directly to the "structure" of the federal budget—hence the term "structural deficit"—and would not be affected by changes in the economy.

Measures of the structural deficit are, at best, imperfect. For many years, policymakers have relied on the *high-employment budget* concept and estimates from the U.S. Commerce Department. Lately, several other measures have emerged, including the *primary deficit* which excludes U.S. Treasury interest payments and receipts. The primary deficit thus moderates the effect of monetary policy on the deficit. Another concept, the *trend employment deficit,* is a variation of the high-employment concept that standardizes the actual budget numbers for more normal (hence, trend) levels of income and unemployment.[2]

The high-employment budget deficit is still the most commonly used measure of the structural deficit. The high-employment budget normalizes the actual budget numbers for changes in income and unemployment, using a standard measure of potential output and high-employment unemployment rates.

As a practical matter, however, sources of economic change other than income and unemployment affect the budget. The most important of these, for present purposes, are inflation and interest costs. The following discussion looks at one of these influences—inflation—and shows that rising inflation tends to disguise the actual size of the structural deficit by providing an important alternative revenue source. This means that, in the past, policymakers were able to postpone difficult choices among government spending priorities and/or tax rates because inflation driven revenues filled the breech. Now, with lower inflation rates (and higher real interest rates) policymakers must confront these troublesome choices. Alternatively, the inflation rate could once again rise. In the past, this was the easy way out.

The Balanced Budget Illusion

During most of the post-World War II period, despite all of the discretionary tax cuts, changes in tax laws to reduce the overall tax base, and increases in entitlement commitments and other domestic nondefense and defense programs, the high-employment measure of the structural budget remained near balance. Admittedly, the high-employment budget typically showed surpluses prior to fiscal 1965. After 1965, it shifted to small deficits, equal to about one percent of potential GNP. However, after fiscal 1981, the high-employment budget moved from near balance to a deficit equal to about 3 percent of potential GNP by fiscal 1983. With no further policy actions, the high-employment budget deficit will remain at about 3 percent relative to potential GNP through fiscal 1986. Budget deficits of this size are far greater than was common during previous post-World War II expansion periods. (See chart on opposite page.)

One can look in many directions for the source of what appears to be a change in budget policy after 1980 to a persistent—and unprecedented—practice of incurring large, sustained structural budget deficits. One important change in the economic landscape is the sharp reduction in the inflation rate. The drop in inflation has had dramatic effects on the federal budget and on the structural budget problem. The drop in inflation and the very difficult choices it poses for both taxpayers and beneficiaries of federal programs are sudden and without parallel during the post-World War II period. The process of adjustment is only partially

[1]The views expressed in this paper are those of the authors, and not necessarily those of the Senate Budget Committee or the Federal Reserve Bank of Cleveland or the Board of Governors of the Federal Reserve System. The authors gratefully acknowledge the assistance and comments of Cheryl Janas Reidy with regard to this project.

[2]For a brief explanation of these alternative definitions, as well as some recent estimates, see the Congressional Budget Office report, *The Economic and Budget Outlook: An Update,* August, 1983.

under way. The success of that adjustment and the ultimate response of economic policymakers to what are already very unpleasant choices has important implications for interest rates, the inflation rate, and the long-term growth potential of the economy.

The Inflation Tax

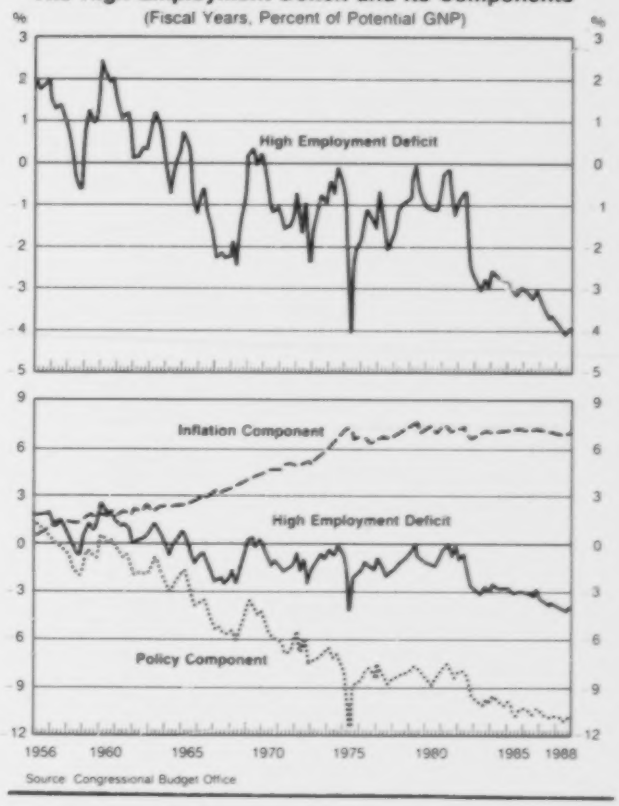
One very important difference in the economic environment between the immediate post-World War II economy and the economy of the late 1960's and 1970's is a persistent, and for many years accelerating, rate of inflation. Under current tax and spending policies, inflation increases both revenues and outlays automatically without any congressional policy action. However, these "automatic" inflation adjustments affect revenues and spending very differently. Because inflation raises the entire tax base and higher marginal rates apply to the inflated income base, revenues historically rose much faster than outlays. Even when the personal income-tax system is indexed, inflation tends to raise revenues faster than spending because inflation raises the level of the remaining tax base while automatic inflation adjustments apply only to some spending programs. In short, with or without personal income-tax indexing, the automatic effects of inflation on revenues and spending are likely to push the budget toward surplus.

Inflation affects the high-employment budget measure of the structural deficit much as it affects the actual budget deficit. A rising inflation rate reduces the structural deficit while a declining rate of inflation increases the structural deficit. This means that, under the conventions of the high-employment budget measure, the structural deficit is reduced not only through difficult choices among higher tax rates, a broader or new tax base, reductions in relative benefit levels, tightened eligibility requirements, and/or reductions in commitments to other nondefense and defense programs, but also as a result of a rise in the inflation rate. Indeed, to the extent that inflation reappears, the pressures for explicit policy choices may subside.

The role of inflation-driven revenues—the inflation tax—is dramatic in financing federal commitments (both explicit tax reductions and spending increases). The chart divides the high employment budget into an "inflation" component and a discretionary "policy" component. The "inflation" component includes the effects of inflation on revenues, the automatically indexed benefit programs, and interest costs since fiscal 1956.[3] The "inflation" component also includes the spending effects of federal pay raises. The "policy" component in this chart includes discretionary budget changes resulting from changes in the business cycle, the effects of inflation on federal spending allowed at the discretion of Congress, as well as all other tax and spending policy changes.

The High Employment Deficit and Its Components

(Fiscal Years, Percent of Potential GNP)



Source: Congressional Budget Office

The basic methodology for dividing the high-employment budget into an "inflation" component and a "policy" component is presented by de Leeuw and Holloway, economists with the Bureau of Economic Analysis.[4] The historical numbers in our analysis represent the budget levels, rather than the changes in the levels as developed by de Leeuw and Holloway. The projections beyond 1983 were provided by the Congressional Budget Office. These projections are based on the policy and economic assumptions contained in the paper by Beeman and Van de Water (see Table 3, page 17). Potential GNP used in our analysis to scale the high-employment budget numbers is based on the Bureau of Economic Analysis' series for potential GNP and projections of potential GNP provided by the Congressional Budget Office. The inflation rate used to project nominal potential GNP is the GNP deflator assumption in the CBO August, 1983, forecast—about 5 percent per year. The high-employment unemployment rate assumed is 6 percent.

The inflation and policy components reflect very different trends than the total high-employment budget deficit.

[3]As the stock of federal debt outstanding grows, inflation-induced increases in nominal interest rates can swell the net interest outlays of the government. Therefore, it is possible for the inflation effects on the budget to change considerably over time.

[4]Frank de Leeuw and Thomas Holloway, "The High Employment Budget: Revised Estimate and Automatic Inflation Effects," U.S. Department of Commerce, Survey of Current Business, April, 1982.

Although the high-employment budget moved only gradually toward deficit during the late 1960's and 1970's, its inflation component moved increasingly and dramatically to higher and higher surpluses. Conversely, the policy component of the budget, which is the high-employment budget less all of the automatic inflation effects, moved increasingly and dramatically toward larger and larger deficits.[5]

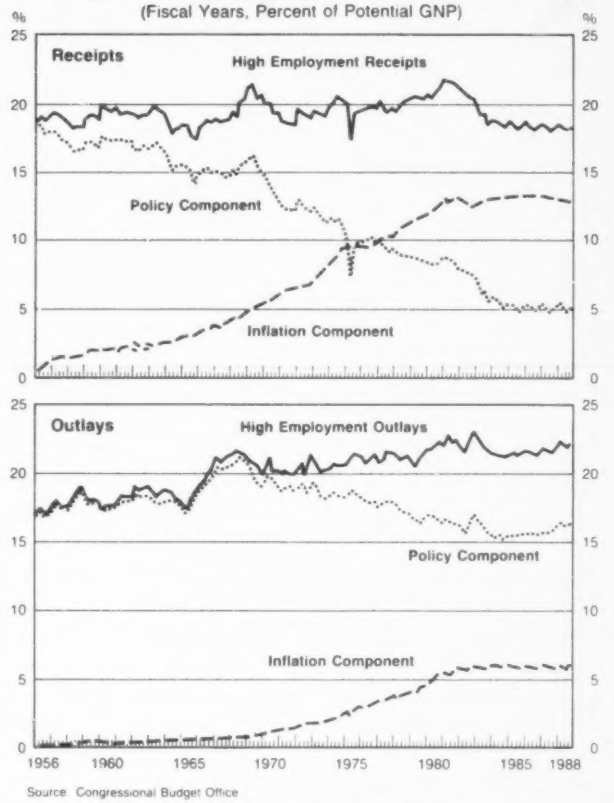
The high-employment budget measure masks the true "policy" deficit because the former measure includes the revenue-generating effects of the "inflation tax." The policy component of the high-employment budget deficit, therefore, is actually much larger than the total high-employment figures would suggest—about $396 billion, or about 10 percent of potential GNP in fiscal 1984. The inflation component offsets almost 7 percentage points of this policy deficit.

During the 1950's and early 1960's, inflation was generally associated with a booming economy. The notion that inflation would raise nominal incomes and force taxpayers into higher tax brackets was thought of as an automatic stabilizer. Within this framework, spending was not expected to change from trend, since the inflation-induced increase in tax receipts was thought to be temporary and tied to the economic cycle. The Federal Government's budget would swing toward surplus during an economic boom due to higher tax revenues and lower spending, thereby slowing the expansion. The logic was simple, even if it now seems somewhat naive. People and institutions have changed since the time when policymakers tended to tolerate inflation as a small price to pay for full employment. Wage and price setters adapted to inflation by striving to compensate employees for price increases and adjusting product prices to the changes in unit production costs.

The Federal Government's spending attitudes also adapted to inflation, either by outright indexation of program costs or by a sequence of discretionary policy changes. Further, the Federal Government began to anticipate and use those additional inflation-driven revenues, either to support increased outlays or to reduce tax rates. Thus, it became all the more difficult for the federal budget to run a surplus in periods of economic prosperity. The chart on this page shows the inflation and policy components of high-employment receipts and outlays. The automatic effect of inflation on the tax base more than offsets the revenue losses

Components of High Employment Receipts and Outlays

(Fiscal Years, Percent of Potential GNP)



Source: Congressional Budget Office

associated with discretionary attempts to lower taxes. During the period between 1956 and 1981, explicit tax rates were cut on average, but the inflation tax more than made up the difference. Between fiscal 1981 and fiscal 1984, tax rates were cut further, but in this case, the inflation tax did not rise to make up the difference.

These conclusions are not materially different if we look only at the effect of inflation on the high-employment budget since fiscal 1973. On this basis, the inflation-driven surplus rises to 6 percent of potential GNP, intead of 7½ percent, by the mid-1980's, and the policy component of the deficit is "only" about 8 percent of GNP. In general, beginning the analysis in 1973 reduces the importance of the inflation component and the residual "policy" deficit by about 1 to 1½ percent relative to potential GNP.

Given current and projected inflation rates, indexing the personal income-tax system holds down the growth in the inflation-driven revenues and the inflation component of the high-employment measure of the structural budget deficit. However, indexing by no means eliminates the effect of inflation on budget outlays.

With indexing of the personal tax system and under current inflation-rate assumptions (about 5 percent annually), the inflation component of the high-employment deficit will grow by about $20 billion per year after fiscal 1985, when

[5]The cumulation of the estimated changes in the budget attributable to automatic inflation effects, automatic cyclical effects, legislation and other factors is not a clear indicator of the effects of these sources of change on the *current* level of the budget. In each quarter, these are calculated given the initial conditions at that time. Because the initial conditions depend on *all* of the earlier changes in the budget, not just changes from any one source, cumulative changes attributable to each source depend in part on the past history of the other sources. For this reason, estimates of the effects of these sources of change on current budget levels must be interpreted cautiously. (See Thomas Holloway, "Sources of Change in Federal Government Transfer Payments to Persons, 1970-1981," *Survey of Current Business*, October, 1982, Footnote 6.)

Table 1: Estimates of The High Employment Deficit—With and Without Indexing
(Fiscal years, $ billions)

	1983	1984	1985	1986	1987	1988
Change in high-employment deficit due to inflation[1]						
with indexing	24	27	25	21	19	19
without indexing	24	27	30	31	31	33
High-employment deficit[2]						
with indexing	-109	-112	-127	-141	-180	-210
without indexing[3]	-109	-112	-122	-126	-153	-169
Change in high-employment deficit due to policy and other factors[4]	- 87	- 30	- 40	- 35	- 58	- 49
High-employment deficit with inflation 2 percentage points higher, beginning in January, 1984	-109	-100	- 99	-105	-132	-152
High-employment deficit with inflation and interest rates 2 percentage points higher, beginning in January, 1984[5]	-109	-102	-109	-121	-152	-176

[1]Based on the fiscal year-over-year rise in the implicit GNP deflator.
[2]These estimates are consistent with those presented by Beeman and Van de Water (pages 15-19) in that they include off-budget deficits.
[3]Based on unrevised estimates of the cumulative revenue loss due to indexing.
[4]The change due to policy and other factors is the change in the standardized-employment deficit minus the change due to inflation.
[5]These estimates reflect the sensitivity of the deficit to changes in economic assumptions, as described in the Congressional Budget Offices *Economic and Budget Outlook: An Update* August 1982, Table B-1, page 89.
Source: Congressional Budget Office.

indexing is fully operational. This means that, each year, $20 billion of the policy component of the deficit will be offset by the surplus-generating effects of inflation. In other words, if inflation were zero rather than 5 percent, the high-employment budget deficit would be $20 billion higher each year after fiscal 1985 than is projected under current policy projections. If indexing were eliminated and inflation averaged about 5 percent per year, the inflation component would grow much faster after fiscal 1985—$30 billion per year—and would rise gradually over time.

With indexing of the personal tax system, the high-employment measure of the structural deficit reaches $210 billion by fiscal 1988; if indexing were eliminated, the structural deficit would grow more slowly and would reach $169 billion by fiscal 1988. (See Table 1.) The $41 billion difference between the high-employment deficit with indexing, as in current law, and without indexing is due to the cumulative effects of the inflation component. If indexing were eliminated, inflation would reduce the high-employment deficit by a cumulative total of $125 billion between fiscal 1985 and fiscal 1988, compared to only $84 billion with indexing. Thus, if indexing were eliminated, the high-employment budget deficit would be $41 billion lower in fiscal 1988, not as a result of difficult changes in tax and spending policies but because inflation would have done the job.

If inflation were to be two percentage points higher than the baseline assumption (i.e., 7 percent) beginning in January, 1984, and interest rates were not to rise correspondingly, the high-employment measure of the structural deficit would be almost $60 billion less by fiscal 1988—and there would be substantially lower interest costs as a result of these lower deficits (not included in these estimates).

In light of the Federal Reserve's commitment to low inflation, higher inflation rates would undoubtedly be accompanied by somewhat higher interest rates. The high-employment measure of the structural deficit would be lower than the current policy high-employment baseline even if both inflation and interest rates are 2 percent higher than the baseline assumptions. (See Table 1.)

This means that even if real interest rates remain unchanged, inflation still serves to reduce the high-employment measure of the structural deficit.

There are some cautions that should, of course, accompany this analysis. The policy component in our analysis

shows approximately what the high-employment budget deficit would have been had the inflation rate been zero. (Approximate because the policy component includes discretionary spending effects of inflation.) Zero inflation is probably an unrealistic standard against which to measure the effects of inflation on the high-employment budget. In a prosperous democratic society, a "normal" inflation rate may actually be above zero—say 3 percent. Adjusting the inflation and policy components to reflect only the effects of inflation above a "normal" rate would provide a more realistic estimate of the inflation tax.

Further study is needed on the effect of interest-cost changes. While the inflation component measures the effect of inflation on interest rates and the effect of this inflation premium on interest costs, all of the remaining interest costs are included in the "policy component." Under current interest-rate and public-debt projections, net interest costs are very large. In fact, net interest costs almost equal the high-employment budget deficit itself. Clearly, these costs are not entirely the result of discretionary policy actions by Congress and the President.

It should be clear from this paper that the concept of the structural budget is itself a major area for future research. Many economists would argue that the high employment budget is useful only in so far as annual changes in the high-employment deficit provide a guide for economic stabilization policy and should not be used as a guide for structural economic policy issues like "crowding out." Alternatively, there are those who prefer the "primary budget deficit" (i.e., the budget deficit net of interest costs)—because it excludes the effects of monetary policy on interest costs—as a measure for assessing longer-term structural policy questions. However, although the primary deficit excludes net interest outlays, it does include the effects of inflation and unemployment on the budget estimates. At present, there is no commonly used budget measure that is a satisfactory guide for structural policy decisions.

Summary

The high-employment budget deficit, the most common measure of the structural deficit, is at best an imperfect measure of discretionary government policy actions. The high-employment budget does not take into account the automatic effects of inflation on the budget. Thus, in the past, policymakers made budget decisions that, in absence of inflation, would have increased the high-employment deficit. Instead, inflation-driven revenues—the inflation tax—rose and slowed what would otherwise have become a precipitous shift toward large high-employment budget deficits.

If the tax system had been indexed even as recently as 1973, policymakers would have had to confront the overwhelming political tendency to over-commit federal resources beyond the level of revenues they were willing to raise explicitly through the tax system. The current budget debate is an attempt to realign these inflation-financed commitments in an environment of lower long-run inflation and high real interest rates. Without a return to rapid inflation and lower or negative real interest rates, explicit spending commitments will have to be reduced further or explicit tax rates and/or the tax base increased if budget deficits are to be reduced. Alternatively, the risk is that the price level will be allowed to rise more rapidly than the 5 percent rate now anticipated. In the past, this was the easy way out.

The Inflation Risk in Projected Deficits[1]

by Preston Miller
Monetary Adviser
Federal Reserve Bank of Minneapolis

Under current policies, federal deficits are projected to be on the order of $200 billion per year into the indefinite future. (See Beeman and Van de Water in this volume.) If we subtract net interest to get a measure of the imbalance between spending on current programs and current revenue, the deficits being projected are unprecedented in modern U.S. history. (See chart on this page.) To reduce them will require an aggressive program of tax increases and spending cuts—highly improbable in an election year. Failing such measures, how will the deficits be financed? The inevitable means is through implicit taxation, whose major form is inflation.

Since a policy of permanent budget deficits requires implicit taxation, two questions arise concerning the inflationary consequences of current policy:

(1) What inflation rate is required to finance permanent deficits of the size currently being projected?

(2) By how much must deficits be reduced to make budget policy compatible with price stability?

To answer these questions, I use the government's steady-state budget constraint:

$$D_t = (\pi + \upsilon)M_t^d + (\upsilon - \rho)B_t^d.$$

The steady-state budget constraint states that the deficit net of interest (D_t) must be financed by implicit taxes on money (M^d_t) and bonds (B^d_t). The implicit tax rate on money is the sum of inflation and real growth ($\pi + \upsilon$), and the implicit tax rate on bonds is the difference between real growth and the real interest rate ($\upsilon - \rho$). (For a detailed explanation of how this steady-state budget constraint was derived and of how it relates to the traditional budget identity written in terms of savings and investment, see box on pages 44-45.) When ballpark estimates are plugged into this equation, the resulting answers to the two questions are less than reassuring:

(1) An inflation rate in the range of 25 to 30 percent per cent may be required to finance deficits projected under current policy.

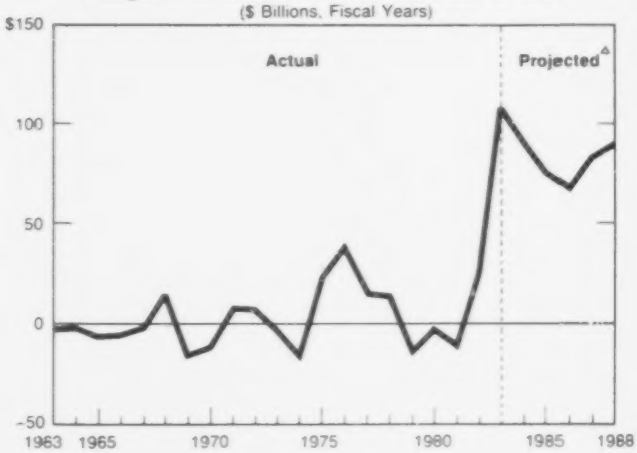
(2) To make budget policy compatible with price stability, deficits net of interest must be permanently reduced by 2 percent of GNP, or by $50 to $60 billion in terms of current GNP, in each and every year.

How These Answers Are Derived

To calculate the answers using the steady-state budget constraint, I make the following estimates and assumptions: I take the current monetary base (M_t) to be $200 billion and the current stock of privately held government bonds (B_t) to be $1,000 billion. I also assume that the ratio of money to bonds remains constant over time. Using the rough estimates that the steady-state deficit inclusive of interest is 5 percent of GNP and that 3 percentage points are interest on the debt, I take the deficit net of interest to be 2 percent of GNP. Assuming current GNP to be roughly $3 trillion, the steady-state deficit net of interest would be about $60 billion.

Using the steady-state budget constraint, the two questions can be answered for varying assumptions about average rates of real growth and real interest. Table 1 (page 46) shows the required inflation rate for financing

Budget Deficits Net of Interest, 1963 to 1988 ▲
($ Billions, Fiscal Years)



▲ Annual deficits excluding interest payments on previous debt.
△ Projections for 1984 to 1988 are based on data in Beeman and Van de Water, Table 2, page 17 in this volume.

[1]The views expressed in this article are those of the author and not necessarily those of the Federal Reserve Bank of Minneapolis or the Federal Reserve System.

Deriving the Steady-State Budget Constraint

I first derive the familiar point-in-time budget identity written in terms of savings and investment (1). Next, I write a second point-in-time budget identity which states that deficits are financed by money and bond issue (2). Steady-state assumptions (a) through (f) are applied to the second identity to derive the steady-state budget constraint (3). Finally, the relationship between the steady-state budget constraint and the first budget identity is shown (4).

The familiar budget identity in terms of savings and investment is taken from GNP accounting. On the demand side, we have

$$Y_t \equiv C_t + I_t + G_t + EX_t - IM_t,$$

where

Y_t = GNP
C_t = consumption
I_t = investment
G_t = federal purchases
EX_t = exports
IM_t = imports.

All quantities are stated in 1983 dollars, and state and local government purchases are incorporated into consumption and investment. We then define savings to be the difference between disposable income and consumption:

$$S_t = Y_t^D - C_t$$

where

S_t = savings
Y_t^D = disposable income.

Disposable income is defined as total GNP plus federal transfers less taxes:

$$Y_t^D \equiv Y_t + TR_t + r_tB_t - T_t$$

where

TR_t = federal transfers net of interest
r_tB_t = interest on the debt (the current interest rate r_t times the stock of privately held federal debt B_t)
T_t = tax revenue.

We can now combine these equations to get

$$(G_t + TR_t - T_t + r_tB_t) \equiv (S_t - I_t) + (IM_t - EX_t).$$

Let D_t be the government deficit net of interest, $D_t \equiv G_t + TR_t - T_t$,
and divide all terms by Y_t to get the first point-in-time budget identity

$$(1) \quad [(D_t + r_tB_t)/Y_t] \equiv [(S_t - I_t)/Y_t] + [(IM_t - EX_t)/Y_t].$$

This identity states that the federal deficit inclusive of interest is identically equal to the excess of savings over investment plus the excess of imports over exports, all expressed as ratios of GNP. (Note that S_t and I_t can both be defined as net of depreciation without upsetting the identity.)

The second point-in-time identity states that the federal deficit inclusive of interest is financed by money and bond issue:

$$(2) \quad D_t + r_tB_t \equiv \dot{M}_t + \dot{B}_t$$

where

$\dot{M}_t$ = the change in the monetary base per unit of time

$\dot{B}_t$ = the change in the stock of privately held federal government debt B_t per unit of time.

"primary" deficits—i.e., deficits net-of-interest—at 2 percent of GNP for different assumptions. For instance, if the economy is able to experience high real growth with low real interest rates, relatively little inflation is required to finance prospective deficits. However, if real growth and real interest turn out to be the same as they were on average for the previous two decades (3.5 and 0.5 percent, respectively), an inflation rate of 11.5 percent is required.

Even this high rate could be too optimistic. Thus far in the 1980's, real growth has averaged 1.1 percent and real interest has averaged 4.3 percent. Given this experience, it seems conservative to assume that the average rates of real growth and real interest will be about the same. This relatively conservative assumption produces my estimate that an inflation rate as high as 25 to 30 percent may be required under current economic conditions to finance prospective deficits.

Table 2 (page 46) indicates by how much the primary deficit (net of interest) must be reduced in order to maintain price stability, given varying assumptions about rates of real growth and real interest. If we again use the 3.5 real growth and the 0.5 real interest rates from the 1960's and 1970's as guidelines, the deficit need only be reduced in each and every year by about $23 billion, measured in 1983 dollars. If, instead, we use my "conservative" assumption that average real growth and real interest rates will approximate each other in the 1980's, the deficit must be reduced by $52 to $60 billion. If averages of the 1980's to date are applied, however, the deficit must be reduced by roughly $90 billion each year.

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This identity is obtained by consolidating the point-in-time budget constraints of the Treasury and Federal Reserve.[1]

In order to derive the steady-state budget constraint, we make the following simplifying assumptions:

(a) $\pi = \dot{P}_t/P_t$ The rate of change of the aggregate price level P_t is invariant over time.

(b) $\upsilon = \dot{X}_t/X_t$ The rate of change of aggregate output X_t is invariant over time.

Since $Y_t \equiv P_tX_t$, assumptions (a) and (b) imply that the rate of change of nominal GNP is invariant over time and is equal to $\pi + \upsilon$.

(c) $r_t = r \equiv \rho + \pi$ The nominal interest rate is invariant over time and is equal to the sum of the is real interest rate ρ and the rate of inflation π.

(d) $D_t/Y_t = D$ The deficit net of interest is a constant proportion of GNP.

(e) $M_t^d = m(\rho,\pi)Y_t$ and $B_t^d = b(\rho,\pi)Y_t$ Money and bond demands are proportional to GNP, where the proportionality depends on the real interest rate and the inflation rate.

(f) $M_t^d = \dot{M}_t$ and $B_t^d = B_t$ The markets for money and bonds clear.

Given these assumptions, a change in budget policy is represented by a change in D, and a change in monetary policy by a change in the path of M.

By combining identities (1) and (2) and setting $r_t = r$, we have:

$$[(D_t + rB_t)/Y_t] \equiv [(S_t - I_t)/Y_t] + [(IM_t - EM_t)/Y_t] \equiv [(\dot{M}_t + \dot{B}_t)/Y_t].$$

Now, $(\dot{M}_t/Y_t) \equiv (M_t/Y_t)(\dot{M}_t/M_t)$ and $(\dot{B}_t/Y_t) \equiv (B_t/Y_t)(\dot{B}_t/B_t)$.

Assumptions (e) and (f) imply $\dot{M}_t/M_t = \dot{Y}_t/Y_t = \pi + \upsilon$ and $\dot{B}_t/B_t = \dot{Y}_t/Y_t = \pi + \upsilon$. We then have

$$[(D_t + rB_t)/Y_t] \equiv [(S_t - I_t)/Y_t] + [(IM_t - EX_t)/Y_t] \equiv (\pi + \upsilon)m(\rho,\pi) + (\pi + \upsilon)b(\rho,\pi).$$

From (c) and (e) we have $(rB_t/Y_t) = (\rho + \pi)b(\rho,\pi)$, so that we have

$$D \equiv (D_t/Y_t) \equiv [(S_t - rB_t - I_t)/Y_t] + [(IM_t - EX_t)/Y_t] = (\pi + \upsilon)m(\rho,\pi) + (\upsilon - \rho)b(\rho,\pi).$$

Finally, multiplying by Y_t we take as our steady-state budget constraint

(3) $D_t = (\pi + \upsilon)M_t^d + (\upsilon - \rho)B_t^d$.

The steady-state budget constraint is related to the more traditional budget identity by

(4) $D_t \equiv (S_t - rB_t - I_t) + (IM_t - EX_t) = (\pi + \upsilon)M_t^d + (\upsilon - \rho)B_t^d$.

[1]For a detailed explanation of how these constraints are consolidated, see Preston Miller, "Higher Deficit Policies Lead to Higher Inflation," Federal Reserve Bank of Minneapolis *Quarterly Review*, Winter, 1983.

Limitations of the Steady-State Budget Constraint

The steady-state budget constraint is applicable only when the assumptions from which it is derived can be reasonably maintained. Therefore, a discussion of its limitations must focus on the steady-state assumptions which were used. These assumptions are simply that certain key rates and ratios are invariant over time.

The many smooth-growth assumptions that I make limit the usefulness of the constraint to questions about structural deficits. As a result, the constraint does not apply to questions about cyclical deficits, since the variance of growth rates and of rates of return is essential in that context. However, the steady-state assumptions should not be taken too literally as referring only to some hypothetical full-employment, balanced growth path. Instead, they can be understood as referring to averages over business cycles. When examining current budget policies, we might, for example, take inflation rates, real growth rates, and real interest rates to be average rates over the decade. Under this interpretation, the steady-state budget constraint would have to be satisfied over a decade at those average rates.

The assumptions which imply that the ratio of money to GNP is invariant over time do not seem too restrictive. They could even be relaxed to allow for trend velocity growth in the monetary base. (For a given deficit, growth in velocity of the money base implies a shrinkage in the inflation-tax base and, thus, a higher inflation rate.) However, this option was eliminated in order to keep inflation estimates conservative.

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Table 1: Required Inflation Rate for Financing Prospective "Primary Deficits"[1] at Different Rates of Real Growth and Real Interest
(Average annual percentages)

Real Growth Rate	Real Interest Rate 0	1	2	3	4
	Required Inflation Rate				
0	30%	35%	40%	45%	50%
1	24	29	34	39	44
2	18	23	28	33	38
3	12	17	22	27	32
4	6	11	16	21	26

[1]Deficit net of interest at 2 percent of GNP.

In deriving the steady-state budget constraint, the only steady-state assumption used that might be controversial is the one stating that the ratio of bonds to GNP is invariant over time. Some might argue that if a given rise in the deficit net of interest can be financed with a given path of money and a rising ratio of bonds to GNP, then the inflationary consequences which I draw from such a policy change need not occur. Therefore, to defend the assumption of an invariant ratio of bonds to GNP over time, I have to argue that it is not possible to finance a higher permanent deficit by bond issue alone. That is, if such an attempt were made, the ratio of bonds to GNP would rise without limit over time so that the interest obligation on the debt would exceed the resources the government can command to pay it.

My previous work suggests that financing a higher permanent deficit by bond issue alone would be possible only if there is an overaccumulation of private capital which causes the rate of return on capital to be too low from the public's standpoint.[2] In other words, the government's ability to raise more implicit taxes from bond issue alone must reflect a form of capital abundance in the private sector. Since everyone seems to agree that no such overaccumulation of capital now exists, it seems safe to argue that financing higher permanent deficits by bond issue alone is not possible in the current economy.

[2]Preston Miller, *Optimal Crowding Out in a Monetarist Model*, Research Department Working Paper 212, Federal Reserve Bank of Minneapolis, August, 1982.

Table 2: Reduction in "Primary Deficit" Required to Allow Price Stability
(Billions of 1983 dollars; percent of GNP[1])

Real Growth Rate[2]	Real Interest Rate[2] 0	1	2	3	4
	Reduction in Primary Deficit				
0	60 (2.00)	70 (2.33)	80 (2.67)	90 (3.0)	100 (3.33)
1	48 (1.60)	58 (1.93)	68 (2.27)	78 (2.60)	88 (2.93)
2	36 (1.20)	46 (1.53)	56 (1.87)	66 (2.20)	76 (2.53)
3	24 (0.80)	34 (1.13)	44 (1.47)	54 (1.80)	64 (2.13)
4	12 (0.40)	22 (0.73)	32 (1.07)	42 (1.40)	52 (1.73)

[1]Deficits expressed as a percent of GNP are enclosed in parentheses.
[2]Average annual percentages.

Advantages of the Steady-State Budget Constraint

Although the steady-state budget constraint is more limited in applicability than the traditional saving-and-investment budget identity, it does offer several advantages. First, the constraint explicitly applies to permanent deficit policies, whereas the traditional identity can make no distinction between a policy of permanent deficits and deficit realizations under a given policy. Second, the constraint indicates that it is not just total savings but their allocation between government money and bonds that determines the feasibility of deficit policies. Third, the constraint is written in terms of demand functions and rates of return—objects about which theory can generate some implications.

Finally, the constraint is useful in clarifying some issues concerning budget policies. It makes clear, for instance, that permanent deficits must be financed by implicit taxes, and it indicates how to calculate those implicit taxes. Because monetary and deficit policies jointly determine the government's revenue from implicit taxes, the constraint gives an operational meaning to policy coordination: For a given deficit policy, only those monetary policies are feasible that generate enough implicit taxes for that deficit policy to be financed. If there is no monetary policy that generates enough implicit taxes, that deficit policy is not sustainable.

Links Between Deficits and Interest Rates

by Mickey D. Levy
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Concern about the adverse consequences of persistent budget deficits is warranted. Recent estimates suggest that, under current law, deficits will not fall substantially below $200 billion in the next several years; and total government debt will rise sharply, even if the economy continues to expand and interest rates recede—an unlikely combination.

This paper focuses on the link between deficits and interest rates. The effect of deficits on interest rates is thought to be crucially important to economic performance but, unfortunately, there is a lack of conclusive evidence about the extent of that impact. The fact that financial markets are influenced by a variety of factors greatly complicates efforts to quantify the impact of deficits on interest rates. Isolating the independent effects of government debt is particularly difficult because a large portion of the level of interest rates in recent years has presumably reflected inflationary expectations, which are not observable. Moreover, the sources of the deficits also affect their potential impact on financial markets—and the magnitude of the projected deficits is far outside the bounds of historical precedents. Yet, viewing this issue from several angles suggests to me that the financial-market impact of these deficits (which have been caused primarily by spending increases) are, at best, neutral, and probably are adverse. Although not the direct focus of this paper, I am also concerned that deficits and the mounting government debt have other undesirable consequences for economic performance that may not be reflected in the market value of financial assets.

In this situation, the most straightforward implication for economic policy is to reduce government spending. But the issue becomes sticky if that route is not politically feasible. Would attempts to reduce future deficits through tax increases be good public policy? Here, the answer is affirmative only if the tax increases are assessed in a way that discourages consumption, and not saving or investment. Since this route is limited by political constraints, efforts to cut the deficit through tax increases must take a backseat to spending cuts.

Mounting Federal Debt

The specter of persistent future deficits (and the rapidly increasing outstanding government debt) forecast for the upcoming years of anticipated strong economic growth is of much more concern than the recent budget deficits that were largely cyclically related to the back-to-back recessions since 1980. The federal government's outstanding public debt has risen dramatically: from $533 billion in fiscal year 1975 to $908 billion in 1980 to nearly $1.38 trillion by the end of 1983. It is forecast to rise to nearly $2 trillion by year end 1986. As a percent of GNP, in nominal terms, the outstanding public debt (excluding debt held by government agencies) has risen from 26.2 percent in fiscal year 1975 to approximately 34.6 percent in fiscal 1983. That portion is forecast to rise substantially in the future.[1]

Without going into the details of estimating the size of structural budget deficits, several related and undesirable budgetary impacts of the mounting debt should be noted. First, during the next several years, the government's net interest will rise, in absolute terms, and as a percent of federal budget outlays and GNP. Second, budget outlays and deficits are becoming increasingly sensitive to interest rates. As net interest expenses rise as a percent of total outlays and the forecast deficit, the avenues available for reducing deficits narrow substantially. Third, barring unanticipated sharp and sustained declines in interest rates, budget outlays can be expected to rise rapidly, even as the economy moves toward its full potential; that is, the deficit will become less sensitive to macroeconomic fluctuations. The implications of this situation for automatic stabilization and fiscal policy are important (but beyond the scope of this paper). However, to the extent that these implications affect the path of potential GNP, the calculation of future structural budget deficits may change.

Deficits and Interest Rates

Government deficits and the rising federal debt may affect interest rates through several avenues. All else being equal, upward pressure is placed on inflation-adjusted rates when the Treasury borrows to finance new debt. Second, deficits lead to higher inflation and interest rates if a portion of the federal debt is monetized by the Federal Reserve. Third, large projected future deficits may raise inflationary expectations and/or financial-market uncertainty about the

[1]Another measure of government debt, its real value, involves adjusting the debt for the depreciation of the future stream of real interet costs due to inflation. (See Phillip Cagan, "The Real Federal Deficit and Financial Markets." *The AEI Economist*, November, 1981.) Shifts in the rate of private saving in response to expected changes in the real value of government debt are crucial to the crowding-out issue. It is considered below.

future path of inflation. This uncertainty is reflected in higher-than-normal inflation-adjusted interest rates.

The impact of deficit financing on private-sector supply and demand of financial assets and the "congestion" caused by the Treasury's borrowing requirement have more of an impact on short-term interest rates than do inflationary expectations. Monetary policy also has a particularly strong influence on short-term rates. Since 1980, a period characterized by frequent shifts in Federal Reserve behavior, short-term rates have declined temporarily each time the Fed has shifted toward monetary ease, regardless of the Treasury's borrowing requirements, and subsequently have tended to rebound upward. The rate of economic expansion and inflation and inflationary expectations, as well as trends in short-term rates, shape long-term interest rates.

All of these avenues through which deficits affect rates are interrelated. In addition, they are not the only factors that affect interest rates. Further complicating the issue, other factors influencing the supply and demand for credit and inflationary expectations are jointly determined with deficits. Deficits are the result of government spending and taxing policies, which influence economic performance, and, in turn, affect the size of the deficit. The wide-ranging possibility of outcomes greatly complicates the analysis of the impact of deficits on interest rates.[2]

Mounting Federal Debt and Inflation-Adjusted Interest Rates

There exists no simple predictable relationship between increases in the federal debt and real interest rates. In a dynamic economy, this relationship is affected by numerous factors such as the frequency of Treasury borrowing, the rate of increase in the federal debt, how the federal debt is financed, state and local government and corporate demand for funds, the response of private domestic saving, and net capital flows from abroad. Each of these influences will be discussed briefly below.

Partial Equilibrium Analysis and its Potential Weakness

For any given level of private saving and loan demand and an unchanged monetary policy, a higher deficit and a larger Treasury borrowing requirement place upward pressure on real interest rates. The best example of this controlled "static equilibirum analysis" is a "snapshot" of a Treasury auction of securities to finance new debt, when the private sector is temporarily unable to adjust its saving or loan demand and Federal Reserve policy is unchanged. Yet the impact of higher Treasury borrowing on real interest rates, as determined within such a static-equilibrium framework, may underestimate the true effect for two related reasons.

First, although the Treasury's financing schedule may not surprise anybody, the size and frequency of the offerings are very disruptive to financial markets. While a static-equilibrium analysis takes into account only the demand and supply factors, markets begin to anticipate Treasury announcements and auctions weeks before they occur. The resulting uncertainty about the impact of the auctions, often reflected as wide swings in financial-market "psychology" unsubstantiated by shifts in "fundamental" determinants of interest rates, may lead to more rate volatility. Such volatility discourages "retail buyers" and long-term "investors" and encourages "traders." This uncertainty may keep rates higher than they would be otherwise.

Second, the impact of deficits must be put into the context of the rapidly mounting stock of government debt. In fiscal year 1975, the deficit was $45 billion, and total federal debt reached approximately $560 billion at year-end. In fiscal 1983, the deficit was $195.4 billion, and the total debt reached nearly $1.38 trillion. If the deficit is approximately $190 billion in each of the next three years (through fiscal 1986), as implied by current law, the total federal debt would expand by nearly 50 percent, substantially faster than expected growth in current-dollar GNP.

It is noteworthy that this very rapid increase in federal debt is being partially offset by state and local government budget surpluses. While state and local operating budgets recently have been approximately in balance, annual aggregate surpluses of about $30 billion have been accumulating in state and local pensions. In the next several years, this source of saving is expected to offset approximately one-quarter of the federal government's dissaving.

Nevertheless, as the federal debt mounts, the Treasury must borrow more frequently and in larger amounts. The impact of a single Treasury auction on interest rates is considered "temporary" in a static-equilibrium model, unwinding as the private sector adjusts its portfolio of financial and real assets. In the present setting, however, it must be viewed as just one of a ballooning series of Treasury borrowing episodes. In the face of rapidly rising Treasury borrowing, portfolio adjustments in the private sector may not be sufficient to mitigate the "temporary" upward pressure on interest rates generated during each new Treasury auction—and a more permanent rise in rates would occur.

To put this pressure into perspective: In current dollar terms, the increase in public debt averaged just 16.4 percent of net private saving during the years 1970 to 1974, and less than 25 percent in 1979; it has since skyrocketed, absorbing over 70 percent of net private saving in fiscal 1982 and more than 100 percent in fiscal 1983.[3] This portion,

[2]U.S. Department of the Treasury, *Government deficit Spending and Its Effects on Prices of Financial Assets*, May, 1983.

[3]In this ratio, the increase in public debt is measured as the annual change in public debt securities excluding debt held by government accounts, while net private saving is personal saving plus net business saving. At least two caveats must be kept in mind when this ratio is used. First, the portion of net private saving absorbed by total government dissaving is less when state and local government surpluses are included. Second, the ratio involves some double counting. For example, some federal programs that are measured as budget outlays add directly to net private savings.

which far exceeds the level reached following the severe 1973-1975 recession, is forecast to remain at dangerously high levels through the mid-1980's.

A persistent trend of rising debt as a percent of private saving and economic activity eventually could strangle financial markets. Certainly, that point has not been (and should not be) reached. Yet Treasury intrusions into credit markets are becoming increasingly bothersome: Financial markets barely have a chance to pause between major Treasury financing and refinancing episodes, and the average magnitude of the total borrowing requirement during each refinancing session is rising. Ultimately, an unending string of partial static-equilibrium adjustments is likely to result in inflation-adjusted interest rates that are higher than they would be in the absence of rising Treasury borrowing needs.

Cyclical Fluctuations in Private-Sector Loan Demand

In the longer run, all else tends not to be equal, so the effect of deficits on real interest rates is modified by both economic behavior and economic policy. For example, deficits rise and fall "passively" with economic contractions and expansions, while private-sector loan demand is positively related to economic growth. While there have been shifts in the composition of public and private loan demand over business cycles, the ratio of real national debt to economic activity has been relatively stable.[4]

Higher Treasury borrowing requirements that are offset by declines in private-sector borrowing (as a percent of saving and/or economic activity) need not put upward pressure on interest rates. Such relative shifts typically occur during recessions as capital spending and personal consumption slow down. During such periods, depository institutions and financial intermediaries increase the portion of Treasury debt securities in their asset portfolios. Typically, as private-sector credit demands rise during economic expansions, these institutions take on more private-sector loans while the government's demand for debt moderates.

The current concern is that, contrary to previous cycles, federal deficits are forecast to recede relatively little as the economy expands, with a growing portion of the deficits "structural" in nature, attributable to "active" fiscal policy. Private credit demands are expected to rise with economic expansion, so that without a commensurate rise in saving, total credit demands would tend to exceed supply—unless interest rates increase sufficiently to balance demand and supply.

Private Saving Response to Deficits

The impact of government debt on interest rates depends crucially on the relationship between private saving and deficits. Rises in private saving in response to government dissaving dampen the upward pressure of deficits on interest rates. For example, private saving may increase in anticipation of future tax increases needed to retire government debt. The interest income associated with the portion of interest rates that reflects inflationary expectations may be saved by creditors as a means of preventing an erosion of the real value of their assets. However, a complete offset of private saving for government deficits, which is necessary to achieve a neutral impact of deficits on interest rates, requires rather heroic assumptions. Evidence about the impact of deficits on saving, a measure crucial to the crowding-out issue, is inconclusive. But even a positive correlation between deficits and saving may not be interpreted as sufficient verification of "Ricardian equivalence" (i.e., perfect substitutability between tax-financed and debt-financed government spending). Such a relationship may actually exist largely because deficits push up interest rates, and the higher rates increase the opportunity costs of current (versus future) consumption.[5] Simply put, the rapidly rising government debt is not, and probably will not be, matched by a commensurate rise in net private saving. Accordingly, inflation-adjusted rates are higher than they would be otherwise.

Foreign Absorption of U.S. Federal Debt

Since government deficits are financed in an open economy, foreign absorption of Treasury debt also alters interest-rate outcomes. Foreign supply of credit reduces the amount of Treasury debt that must be absorbed by domestic creditors, and thereby spreads the interest-rate effects worldwide. But foreign purchases of Treasury debt heighten the demand for U.S. dollars, thereby reducing the demand for U.S. products and depressing the U.S. export sector. Thus, while higher domestic interest rates are circumvented, the economic costs of the mounting federal debt do not disappear, but are merely shifted. At present, a symptom of such a shift in debt financing is the strong U.S. dollar and the terribly depressed export sector.

Financial and Real Crowding Out

Government policy responses to deficits crucially affect the impact of federal debt. The government's demand for debt typically is assumed to be price inelastic, while private-sector loan demand is assumed to be sensitive to interest rates. This is the basis for "financial" crowding out: government dissaving, not matched by private saving, forces up interest rates, making it uneconomic for marginal prospective private debtors to borrow. As an extension of this argument, a second characteristic that distinguishes public from private demand for debt is the extent to which the government borrows primarily to finance activities that do not lead to increased productive activity. This extends the notion of

[4] Benjamin Friedman, "Managing the U.S. Government Deficit in the 1980's," National Bureau of Economic Research, Working Paper No. 1209, October, 1983.

[5] At issue here is the interest elasticity of saving, about which there is much debate.

crowding out beyond financial markets to economic activity, which links rising government debt with lower investment and economic output and, ultimately, with higher inflation. This linkage is limited to the extent that deficit-financed government spending is for "productive" activities; for example, a portion of the government's payments to individuals is saved by recipients, while some government outlays for research and development and for defense stimulate investment and raise productivity.

Government Budget Restraint

In a strict sense, the Treasury must borrow to finance outlays that exceed tax receipts, suggesting that interest rates do not enter into the government's decision to borrow. Yet a third way that distinguishes government from private-sector demand for debt is the government's ability to expand the money supply in order to pay for a portion of its debt. This occurs when the Federal Reserve purchases Treasury securities, thereby increasing the supply of bank reserves and the money supply. Such "monetization" of the debt, which increases future inflation, effectively lowers the present value of the government's debt. It is this option, whether directly or inadvertently exercised by the Federal Reserve, that provides the primary relationship between deficits and inflation and inflationary expectations.

Deficits and Monetary Policy

Deficits may be associated indirectly with inflation if the Federal Reserve increases bank reserves and the money supply in response to the mounting debt. Presumably, the Federal Reserve would purchase Treasury securities and increase reserves in response to deficits in an attempt to mitigate or postpone the (actual or perceived) upward pressure these deficits place on real interest rates. An overly expansive monetary policy is a necessary condition for persistent inflation, but monetization of deficits generates inflation with a lag. Accordingly, a concurrent statistical relationship between deficits and inflation should not be expected, unless government debt and money supply grow along the same trend line.

I have found a positive and statistically significant correlation between changes in the monetary base and changes in publicly held debt.[6] This Federal Reserve response to government debt was measured within the context of a structural model of the economy, with an endogenous monetary sector, during the period 1952 to 1978. This finding that the Federal Reserve has monetized a portion of deficits has been confirmed in other studies.[7]

The long-term objective of the Federal Reserve probably does not include monetizing a portion of the deficit. But, as noted above, the persistent string of deficits and the mounting federal debt have pushed the Fed into a posture of allowing reserves to grow faster than they would have otherwise. Financial market uncertainty and interest-rate pressures mount in anticipation of, and during, Treasury auctions. The Fed's short-term efforts to smooth interest-rate fluctuations during a string of Treasury financing periods have led to an increase in money supply growth and higher inflation. As a result, the Fed has been boxed into a corner of partially accommodating the deficits—and higher inflationary expectations have resulted. Efforts to shift monetary policy toward nonaccommodation during 1981 and the first half of 1982 were associated with uncertainty and possibly misperception about future Federal Reserve policy. In the process, real interest rates ballooned, unemployment rates rose, and large economic costs resulted.

Although monetary policy is influenced by a number of factors other than deficits, massively mounting government debt requires the Federal Reserve to tread a fine line between "limited" accommodation and an inflationary monetary policy. This situation is illustrated by considering the portion of the federal debt held by the Federal Reserve. The share of the "monetized debt"—that is, the portion of federal debt held by the Federal Reserve—averaged approximately 14 percent from 1952 to 1981, reached nearly 25 percent in the mid-1970's, and declined below 16 percent in 1981.[8] In October, 1979, the Federal Reserve shifted policy by targeting more directly the growth of the money supply through controlling bank reserves. Since then, the central bank has purchased a much smaller portion of nominal public-debt securities than it had in the past: 7.3 percent in 1980, 4.5 percent in 1981, 7.4 percent in 1982, and 9.9 percent in 1983.

In the face of current and forecast huge federal deficits, a noninflationary monetary policy requires that the Federal Reserve continue to monetize a lesser portion of new debt during the next several years than its average since 1952. For example, a $180 billion deficit in fiscal 1984 (including the off-budget entities) would increase federal debt by 13.1 percent. Were the Federal Reserve to maintain its current ratio of federal debt to total federal debt (13.6 percent at end of fiscal 1983), it would have to add approximately $20.4 billion, or 13.1 percent, to its federal debt portfolio. The resulting increase in reserves and money supply would

[6]Mickey D. Levy, "Factors Affecting Monetary Policy in an Era of Inflation." *Journal of Monetary Economics*, November, 1981.

[7]See, for example, Michael Hamberger and Burton Zwick, "Deficits, Money and Inflation." *Journal of Monetary Economics*, January, 1981; also Alan Blinder "On the Monetization of Deficits," National Bureau of Economic Research, Working Papr No. 1052, December, 1982. While others have found no statistically significant relationship between deficits and monetary policy, several of those studies involved empirical tests that were specified improperly. For example, some used M1 as a measure of monetary policy, which is misleading since the Federal Reserve responds to a government budget restraint by changing reserves, while the pattern of M1 growth, which is not fully under the control of the Fed, tends to lag reserve growth.

[8]James Tobin, "Budget Deficits, Federal Debt, and Inflation in the Short and Long Runs," in A.T. Sommers, ed., *Toward a Restructuring of Federal Budgeting*. The Conference Board, MISC-83-1, 1983.

be highly inflationary. In order to limit monetary-base growth to approximately 6 percent, the Federal Reserve must absorb a much lower proportion of the rise in federal debt.

Stated differently, the unprecedented huge deficits reduce dramatically the Federal Reserve's flexibility to monetize the deficit in an attempt to mitigate or postpone the impact of deficits on interest rates without generating higher inflation and inflationary expectations. In the past, partial monetization occurred as the Federal Reserve responded to concurrent economic and financial market conditions and pressure from the Congress or the Administration. At present, high deficits and the rapidly mounting debt sharpen the conflict between accommodation and inflation; the Federal Reserve is left with less room to move.[9] If the Fed follows a policy of resisting accommodation, an increasing portion of the rapidly rising debt must be absorbed by the public. This puts upward pressure on interest rates and allows the present value of the government debt and real interest costs to rise—perhaps to unsustainable levels. Alternatively, if the debt is absorbed by foreign creditors, this dilutes the impact on domestic interest rates, but it strengthens the demand for U.S. dollars (which depresses the nation's net export sector).

The 1980's experience of mounting federal debt and nonaccommodation is noteworthy: Sharply higher inflation-adjusted rates have increased real government interest costs while sharply lower inflation has dramatically lowered the path of tax receipts, and further increased federal deficits. The spiral of higher debt to finance rising interest costs (not debased by monetary accommodation) would be inflationary in the long run to the extent it crowds out private capital and lowers the growth path of real output.

An alternative monetary policy, one in which the Federal Reserve absorbs more federal debt, would reduce the amount that must be held by the private sector (either domestic or foreign), but would lead to higher inflation. This inflationary policy would reduce the real value of the federal debt obligation and stabilize the ratio of real federal debt to GNP, but it would generate higher and more volatile market interest rates, a most undesirable outcome.

In the current policy debate, some analysts have suggested changing the "policy mix," that is, easing monetary policy and tightening fiscal policy, in order to lower interest rates and improve economic performance. While such options deserve consideration, the suggestion that monetary and fiscal policies are substitutable is misleading. Rather, each has its own distinct and different impact on real economic activity and inflation. Briefly, a reacceleration of money-supply growth tends to stimulate real economic activity with about a half year lag. In the longer run, however, it generates higher inflation and inflationary expectations, while its impact on real economic activity becomes more neutral. On the other hand, fiscal policy has little direct impact on the rate of inflation, but has a substantial affect on the longer-run path of economic growth and its composition. Once these distinctions are sorted out, the fallacies contained in the argument to change the policy mix become clear.

Deficits, Inflationary Expectations and Uncertainty

The recent upsurge in federal debt and the projected string of future deficits probably raises inflationary expectations or, at a minimum, increases uncertainty about the future path of inflation. These expectations and the heightened level of uncertainty have added to high inflation-adjusted interest rates. A shift in monetary policy toward partial accommodation would temporarily reduce inflation-adjusted rates, but its long-run impact would be uncertain—depending in part on the demand for money.

Monetary policy is the primary link between deficits and inflationary expectations. Currently, expectations of high future inflation emanate from huge projected deficits and uncertainty about how they will be financed. In the past, a significant portion of federal debt has been monetized, and it is this past link of deficits, monetary policy, and inflation that justifies current expectations of high future inflation. Recently, the Federal Reserve has displayed more resolve in conducting a disinflationary monetary policy in the face of mounting federal debt than in the past. In fact, current yields on long-term debt securities assume that the portion of future deficits that will be monetized will continue to recede. Yet there is tremendous uncertainty about the potential inflationary impact of deficits. Current high inflation-adjusted interest rates reflect this uncertainty as an additional premium that cushions creditors against the risk of capital loss generated by interest-rate increases. The recent erratic pattern of monetary policy has added to the volatility, and consequently the level, of interest rates. Unfortunately, it has proven to be difficult to quantify the impact of deficits on inflationary expectations.

Reflections and Conclusions

It is my belief that the huge deficits and mounting debt that we face have generated higher interest rates than would have occurred otherwise, even though I acknowledge the lack of rigorous empirical evidence that conclusively identifies and directly measures an adverse impact of deficits on interest rates.[10] To me, this lack of direct evidence suggests more that domestic interest rates are affected by a com-

[9]In this connection, see Thomas Sargent and Neil Wallace, "Some Unpleasant Monetarist Arithmetic." *Quarterly Review*, Federal Reserve Bank of Minneapolis, Fall, 1981; and Preston Miller, "Higher Deficits Lead to Higher Inflation." *Quarterly Review*, Federal Reserve Bank of Minneapolis, Winter, 1983.

[10]Only a few empirical tests have successfully found a direct, positive impact of government debt on interest rates. Among them: Martin Feldstein and Otto Eckstein, "The Fundamental Determinants of the Interest Rate." *Review of Economics and Statistics*, November, 1970; Allen Sinai and Peter Rathjens, "Deficits, Interest Rates and the Economy," *DRI Review of the U.S. Economy*, June, 1983.

plex web of interacting factors that are difficult to sort out, rather than confirming the hypothesis that "deficits don't matter." Moreover, I am greatly concerned with the adverse impact of persistent deficits and the mounting government debt on the allocation of resources between public and private economic activities, and the growth and composition of future economic activity. The undesirable intergenerational redistribution of wealth that would result from slower future economic growth would be a costly price to pay for the fiscal policy we are now pursuing.

At the bottom of this issue is ballooning government spending: Unfortunately, the *economic* policy solution—slowing the growth of spending—is severely hampered by political stalemate. Would deficits reduced by tax increases dampen the upward pressure on interest rates? The answer depends on the composition of the tax increases; their impact on saving, investment, and economic growth; and their net impact on the supply and demand for credit under different monetary regimes. Faced with a myriad of outcomes, it is not surprising that the impact of a tax increase on interest rates is ambiguous. Confronted by complex yet inconclusive analysis, I propose that we turn to the practical solution of applying spending cuts as the leading step in any attempt to slow the rise in government debt.

Structural Budget Deficits and The Crowding Out of Business Investment

by Gary M. Wenglowski
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Recent developments suggest that the problem of the federal deficit has not been solved by rapid economic growth in 1983, nor will it be solved by a fairly strong second-year expansion in 1984. My latest deficit estimate of roughly $170-180 billion for fiscal 1984 does not indicate significant improvement over the $195.4 bilion for fiscal 1983, despite further economic gains. The latest offsets to the benefits of high growth are the rejection by Congress of the proposal to withhold tax on interest and dividend payments, and the failure to pass much of the proposed nondefense program cuts for fiscal 1984. (My estimates assume a $5 billion reduction from the President's 1984 defense-spending proposal.)

Economic Growth Will Not Solve the 1984 Deficit Problem

The persistence of the 1983 and 1984 deficits, despite stronger economic growth, implies an increase in the so-called structural deficit over the past six months. One estimate of the structural deficit is the high-employment budget balance, which eliminates the effect of unemployment above some assumed level from the actual deficit figures. Between January and April, 1983, this estimate of the structural deficit (based on a 6 percent unemployment rate) rose by $13 billion for fiscal 1983 and by $21 billion for 1984. My latest estimates imply a $30 billion increase in the structural deficit between fiscal 1983 and 1984 and a $20 billion rise in 1985.

It is possible that as stronger economic activity has an increasing impact on the budget, the deficit will fall below projections for a time. However, I believe that it would be inappropriate to de-emphasize the problem until several sources of budgetary imbalances are corrected.

First, personal tax rates will be indexed for inflation beginning in 1985, while no significant curtailment of the indexing of entitlement program benefits has been initiated. In addition to raising the deficit, this combination reduces the portion of the electorate experiencing an immediate loss from higher inflation, thereby reducing political support for anti-inflation policies.

Second, taxes have been reduced while a major defense buildup is under way. Escalating inflation during the second half of the 1960's, when a tax *increase* was delayed for two years as a defense buildup for the Vietnam War took place, illustrates the potential risks.

Finally, in a vicious cycle, high nominal interest rates are both the result and cause of increasing structural deficits. Sargent and Wallace have shown that when the budget deficit exceeds the government's net interest bill and when nominal interest rates exceed the growth rate of nominal GNP, the net interest bill grows faster than GNP and becomes a major force in boosting federal expenditures and deficits.[1]

The high-employment budget deficit (expressed as a percent of GNP) increased between mid-1981 and 1983 by aproximately the same magnitude as the swings toward deficit (or reduction in surplus) associated with the 5 previous post-World War II recession-early recovery periods. This time, however, there are two important differences:

(1) The high employment deficit *continues* on a high plateau in the second year of economic recovery (contrasting with declines in all the earlier cases, except for 1972).

(2) The 1983-1984 high-employment deficit as a percent of GNP remains at historically high levels that were equaled only in the 1967-1968 period related to the Vietnam war buildup.

A shift toward larger high-employment budget deficits (or smaller surpluses) was considered stimulative to business activity in the past and may be appropriate during recession and early recovery periods.

However, the deficits expected for 1983 and 1984, in addition to being unusually large and long lasting, occur at a time when greater attention is being paid to a more disciplined monetary-policy approach. To gauge the interaction of these deficits with monetary policy and their effect on the business outlook, an analysis of expected total saving and the composition of investment is in order.

Surprises in the "Crowding Out" Process

Total net saving in the U.S. economy consists of personal saving, retained corporate profits, state and local governments' budget balance, and the surplus or deficit (i.e., dissaving) in the federal budget, as shown in Table 1. Net saving must equal total net investment, which is made up

[1]Thomas J. Sargent and Neil Wallace, "Some Unpleasant Monetarist Arithmetic." *Quarterly Review*, Federal Reserve Bank of Minneapolis, Fall, 1981.

Table 1: Composition of Saving and Investment with Increasing Federal Deficits

	Q1/1970 to Q4/1970	Q1/1974 to Q1/1975	Q2/1980 to Q4/1982	Q1/1970-Q4/1970 to Q1/1974-Q1/1975	Q1/1974-Q1/1975[1] to Q2/1980-Q4/1982	1982	1983 (est.)	1984 (est.)[1]
	(Annual averages, $ billions)			(Average annual percent change)			($ billions)	
Net Saving								
Personal saving	$ 55.8	$ 83.1	$ 125.7	10.1%	6.1%	$ 125.4	$ 106	$123
Retained corporate profits[2]	14.8	13.8	38.2	1.7	15.7	36.9	78	102
State-local government budget balance	1.8	5.8	32.5	32.8	27.9	31.3	46	55
Federal government budget balance	-12.4	-18.3	-94.9	9.9	26.5	-147.1	-200	-192
Total[3]	60.0	84.4	101.5	8.6	2.7	46.5	30	86
Net private investment								
Business investment	103.9	156.3	338.7	10.4	11.7	348.3	340	376
Change in inventories	3.2	8.4	-5.6	26.4	—	-24.5	-6	35
Residential	37.1	56.5	98.1	10.7	8.2	90.7	129	150
Net foreign investment	3.2	5.6	1.1	14.5	-20.7	- 8.3	-45	-56
Depreciation[4]	-88.0	-139.4	-331.7	11.8	13.2	-359.2	-384	-419
Total[3]	59.4	87.4	100.6	9.8	2.0	47.0	34	85
Addendum:								
Federal deficit as percent of net saving:	17.1%	17.8%	48.3%	n.a	n.a	76%	87%	69%

[1]Assumes 10 percent nominal GNP growth.
[2]After adjustment for inventory profits and the difference between replacement cost and actual depreciation.
[3]Differences in totals are due to the "statistical discrepancy" in data sources.
[4]Including capital consumption adjustment.
n.a. = not applicable.

of business investment in plant, equipment and inventories; residential investment (housing construction); and net investment in foreign assets. Depreciation is deducted from the gross investment figures in this analysis because it focuses on *net* saving and *net* investment, which relate to *changes* in the economy's productive capacity.

The impact of the prospective budget deficits on the outlook can be assessed by analyzing the response of the saving deficits during the past two business cycles (see Table 1). During the 1970 recession, the deficit was only $12.4 billion, or 1.2 percent of GNP. It expanded to $18.3 billion (1.3 percent of GNP) in the 1974-1975 recession, and $94.9 billion (3.3 percent of GNP) in the 1980-1982 recession. As the federal deficit rose, the increase in personal saving slowed, from 10 percent compound average annual growth between the early and mid-1970's to only about 6 percent per year between the mid-1970's and early 1980's. The growth in business saving increased rapidly—from 1.7 to 15.7 percent—and the increase in the state and local budget surplus (which reflects the current surplus in their pension programs) was large in both periods.

Because of slower growth in personal saving in the second half of the 1970's and the rising federal budget imbalance, total net saving slowed from 8.6 percent growth rate in the early 1970's to only about 2.7 percent per year in the mid-1970 to early-1980 period. This slowdown reflected the absorption by the federal deficit of an increasing portion of net private and state and local saving: 17.1 percent in 1970, to 48.3 percent in 1980-1982 (see chart on page 55).

Some economic theoreticians have argued that rising budget deficits should encourage larger personal savings by consumers concerned about the future debt burden, or future tax increases, resulting from high deficits.[2] Therefore,

[2]Robert J. Barro, "Are Government Bonds Net Wealth?" *Journal of Political Economy*, November December, 1974.

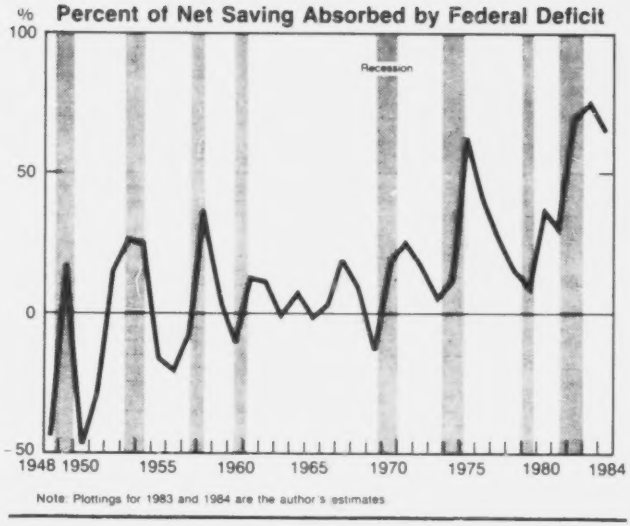
the first surprise in the crowding-out process has been the lack of a pickup in private saving growth to offset increasing federal deficits between 1970 and 1980 even partially. There is a hint that this may have begun to change to some degree in the 1981 and 1982 personal saving data, which are discussed below.

The second surprise in this analysis is the absence of apparent impact of the 69 percent decline in the growth rate of net savings on business investment spending. Business investment in plant and equipment actually accelerated slightly from a 10.4 percent compound average annual growth rate during the early and mid-1970's to an 11.7 percent annual expansion between the mid-1970's and early 1980's (as shown in columns 4 and 5 of Table 1). Business investment spending as a percent of GNP trended upward between 1975 and 1979, and remained on a plateau—at near-record levels—during 1980 and 1981.

The impact of slower saving growth was largely felt in three other investment categories. The expansion of *housing construction* activity decelerated, and investment in inventories was particularly hard hit. *Inventory liquidation* was recorded for the 1980-1982 recessionary period, on average, in contrast to small accumulations in the earlier recessions (summarized in Table 1). In fact, the largest inventory liquidation of the entire post-World War II period was experienced in 1982. United States *net foreign investment* first declined, and then turned negative, in 1982—that is, foreigners came to invest more in U.S. assets than the United States was investing abroad. *The experience of the past seven years suggests that the most vulnerable component of investment to the crowding out from large budget deficits is inventory investment, followed by net foreign investment and housing, with business investment least affected.*

These results seem consistent with the components' relative sensitivity to the increasing interest rates that are inherent in the crowding-out process. The analysis below shows that personal saving is relatively insensitive to high interest rates, in part because the interaction of U.S. tax laws and inflation lowers them substantially for most consumers. It will also show that business investment is relatively rate-insensitive, in part because rates of return on such investment have been rising significantly.

The tendency of business investment to continue expanding and for personal saving not to accelerate significantly in the face of high interest rates focuses the crowding-out process on the remaining investment components—inventories, foreign investment, and housing. A critical question for the outlook is whether, because of the disparate impact of crowding out in a recovering economy, the pressures on specific sectors will force a more accommodative monetary policy than would otherwise be desired. There was a suggestion of such feedback from the deficit to monetary policy in the past year-and-a-half, when rapid monetary expansion followed a deepening debt problem among the less-developed countries.



Note: Plottings for 1983 and 1984 are the author's estimates

Implications of a Saving-Investment Trial Balance for 1983-1984

Investment was brought into balance with an unusually low total net saving flow of $46.5 billion in 1982 with declining interest rates. This unusual combination reflected declines in inventories, net foreign investment, and residential investment because of the recession and because monetary policy was easing significantly. Total net saving in 1983 is estimated at only $30 billion, based on my projections of nominal GNP and income and a $200-billion federal deficit in calendar 1983. Thus, despite the strong economic recovery in 1983 and a sizable rise in residential construction, the balance between net investment and net saving is stuck again at a low level. The primary reasons for this are a sharp increase in foreign capital inflows and a modest slippage in business investment—the result of the lagged effects of recession—and only a gradual upturn in inventory investment.

Things are likely to be tighter in 1984. My saving and investment projections assume what I believe to be the Federal Reserve Board's and the Administration's desired path for 1984 business activity: an increase of about 9 percent in nominal GNP between the fourth quarters of 1983 and 1984 (which would result in a rise of about 10 percent on a year-over-year basis). Growth of that magnitude would gradually reduce unemployment without putting significant upward pressure on inflation.

The 10 percent year-to-year gain in 1984 nominal GNP would significantly exceed the 7.9 percent gain expected for 1983. Associated with this projection is a rise of close to 16 percent in personal savings and a 31 percent rise in retained corporate profits in 1984, which should push total *net saving* to the $86-billion level despite an expected $192-billion federal deficit. Business investment is also likely to be cyclically stronger, rising about 11 percent in 1984, in line with the usual recovery pattern.

A set of projections for the other components of investment consistent with these 1984 saving levels is shown in Table 1. They include three major anomalies for the second year of an economic recovery:

- First, the $35-billion inventory change implies a 4.1 percent increase in the real inventory stock; the real inventory-to-sales ratio falls to post-World War II lows by early 1984.
- Second, the 1984 residential investment estimate would accommodate no more than 1.73 million housing starts, a respectable level but an insignificant rise over 1983.
- Finally, and most important, an increasingly *negative* U.S. net foreign-investment position—that is, rising net capital inflows into the United States—would be required to balance 1984 savings and investment.

The latter appears to be the most serious distortion in the 1984 outlook resulting from the continuation of large budget deficits. Net capital *inflows,* which rose sharply from $8 billion in 1982 to an estimated $45 billion in 1983, are projected to increase further to $56 billion in 1984. The current account deficit and negative net foreign investment are linked because the deficit creates the foreign income and foreign exchange to support the saving inflow from abroad. It is possible that current account deficits and investment inflows of the size implied in Table 1 would develop if U.S. interest rates and the dollar's foreign-exchange value remained at recent levels. However, if business activity abroad picked up more than expected, higher U.S. interest rates would be necessary to balance saving and investment in the United States.

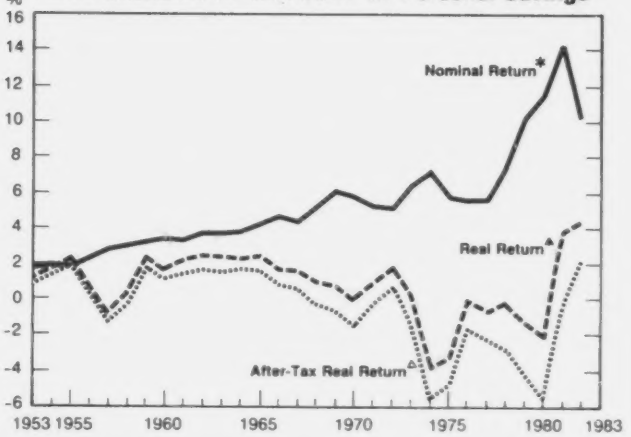
Several reactions seem predictable. A rising U.S. current account deficit will blunt the recovery for those U.S. industries most vulnerable to foreign competition, many of which are already lobbying for protectionist measures and for lower interest rates to reduce the dollar's exchange value. Although some foreign industries would enjoy the benefit of large U.S. current account deficits, foreign governments would probably increasingly accuse the United States of exporting its crowding-out problem and of undermining world recovery with its large budget deficits and high interest rates. Critical questions for the 1984 outlook are:

(1) What interest-rate levels would be necessary to achieve and to balance the projected flows of personal savings and investment?

(2) How severe are the reactions of the affected domestic and foreign sectors likely to be?

I believe that interest-rate increases from current levels would be required to keep downward pressure on desired inventory-to-sales ratios, to prevent any further rise in housing starts, and to keep the inflow of foreign investment sufficiently high to balance the projected flows of personal savings and investment—all in the face of recovering U.S. and world economies. The reaction of parties adversely affected by rising interest rates and the changing investment

Three Measures of the Return on Personal Savings



* Weighted average of interest returns on saving accounts, small time deposits, short-term money market intruments, and long-term taxable bonds, using the actual household inflows to these various instruments as weights.

▲ Nominal return less the actual change in the Consumer Price Index each year.

△ Nominal return multiplied by (1.0 minus the average marginal tax rate) less annual change in Consumer Price Index.

Source: Goldman, Sachs & Co.

composition is likely to have a larger impact on economic policy in 1984 than it did in 1983, since 1984 is a national election year.

In the end, the composition of 1984 saving and investment that is consistent with the Administration's and the Federal Reserve's desired growth path for the U.S. economy may not be politically sustainable. Since the budget deficit is not likely to decline significantly, monetary policy will probably end up somewhat more expansive as a result of efforts to limit the rise in interest rates. As a result, nominal GNP is likely to expand somewhat more rapidly in 1984 than its "desired path"—to about 11 percent on a year-to-year basis. Such stronger growth in nominal incomes will create a greater rise in saving, more federal tax receipts, and a bit less onerous composition of investment in 1984.

The reaction of the long-term bond and foreign-exchange markets to more expansive U.S. policies should be muted as long as the actual inflation data do not signal significant acceleration. This should be the case until about mid-1985 (as discussed below). A slowdown in the growth of the money supply, as measured by M1, from recent double-digit rates to around 7 percent during 1984 is consistent with this forecast.

Consumer Interest Rates Are Higher but Not High

Changes in the personal saving rate are also important for the consumer-spending outlook. The most significant recent developments potentially affecting future personal saving are the sharp increases in interest rates.

Three alternative measures of the return on consumer saving are plotted in the chart above: (1) marginal saving returns before any adjustments for inflation or personal taxes; (2) marginal real returns, which include an adjust-

ment for inflation; and (3) marginal real after-tax returns that include adjustments for inflation and taxes. The last is the most relevant measure. The average of marginal tax rates that is used for each year in order to derive this after-tax real rate of return is based on a historical study for 1952 to 1980 by the National Bureau of Economic Research, supplemented by my estimates of the effect of the Reagan Administration's tax cuts for 1981-1983.[3]

The nominal rate of return on saving soared from 1970 to 1982 to three to four times its level in the early 1960's, but the real after-tax rate of return was negative during most of the 1970's; moved close to zero in 1981; and reached a positive 2.1 percent in 1982. In 1983, the rate will be roughly 2.0 percent, given present interest-rate levels, a somewhat lower marginal tax rate, and 5 percent inflation. These 1982 and 1983 after-tax real rates of return are not significantly higher than those of most of the 1950's and 1960's. Also, real after-tax rates of return around 2 percent do not seem high on an absolute basis.

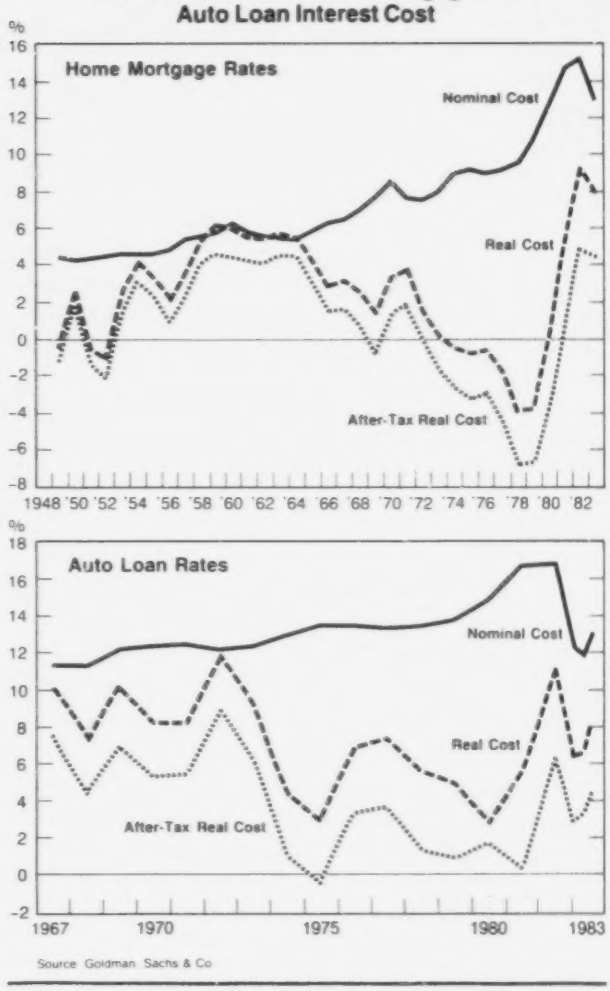
The emphasis on saving returns in analyzing personal saving is somewhat misplaced. The personal saving rate can be viewed as the difference between two distinct components: (1) increase in consumer holdings of financial assets (saving), and (2) the increase in consumer debt (borrowing). (In empirical data, a third equilibrating component is the "statistical discrepancy," which captures statistical and measurement errors.) Cyclical movements in the saving rate are much more closely correlated with the cyclical swings in *consumer borrowing* than with purchases of financial assets, and the unusually low post-1976 saving rates are best explained by high consumer borrowing.

The United States is one of the few developed countries whose tax laws permit almost unlimited deductibility of consumers' interest costs. This shields the U.S. economy from some of the effects of high nominal (pretax) interest rates, intensifying the pressure on foreign economies from large U.S. budget deficits. Consumer-borrowing costs on home mortgages and automobile loans are shown in the accompanying chart on three bases (similar to the analysis of saving returns in the preceding chart)—unadjusted nominal costs, real or inflation-adjusted costs, and real after-tax costs.

For U.S. mortgage rates, the result is similar to that for saving returns. In 1980 to 1983, unadjusted mortgage rates are far above those of the first half of the 1960's; real mortgage rates are also higher, but by a smaller margin. After-tax mortgage rates are now above the negative levels that prevailed during most of the 1970's—but they are not significantly higher than during most of the 1950's and 1960's. The available figures on auto-loan rates also show the now-familiar pattern. Real, after-tax borrowing costs for cars moved up sharply in 1981 and 1982 from unusually

[3]Robert J. Barro and Chaipat Sahasakul, "Measuring the Average Marginal Tax Rate from the Individual Income Tax." *Journal of Business*, October, 1983.

Three Measures of Home Mortgage and Auto Loan Interest Cost



Source: Goldman, Sachs & Co.

low levels during the second half of the 1970's—but these costs do not exceed those of the earlier periods.

It was the *increase* in real after-tax interest rates in 1981 and 1982 that reduced consumer demand. Excessive spending on housing and consumer goods—supported by credit available at unsustainably low costs during the late 1970's—was curtailed, as were more basic demands. When real, after-tax rates declined in the second half of 1982 and early 1983, housing and consumer durable goods demand began to revive. Present real, after-tax interest rates (approximately 1.9 percent for saving returns, 4.4 percent for mortgage rates, and 3.0 percent for auto-loan rates) do not seem high enough to prevent normal consumer spending on durable goods and housing.

Liberalization of the requirements for Individual Retirement Accounts (IRA's) provides an opportunity for more savers to defer the tax on saving returns. However, the penalty on early withdrawals makes IRA's attractive primarily for saving for retirement, which is only one of

several saving motives. The failure of the saving rate, or the rate of increase in consumer holdings of financial assets, to rise since the beginning of 1982 when the new IRA guidelines came into effect suggests that most of the large inflows being recorded in IRA's represent shifts among existing savings rather than new saving.

The negative effect of the changing age mix of the U.S. population on the saving rate should begin to reverse in the 1980's. However, demographic effects are gradual (producing a 0.1 to 0.2 percent impact on the saving rate per year), and it will take many years for the age mix to be as favorable for the saving rate as it was in the early 1960's. On balance, recent levels of real, after-tax saving returns and borrowing costs suggest that the personal saving rate could rise above the unusually low 4.5 to 6.5 percent band within which it moved during most of the 1977 to 1980 period. It could eventually move back toward the 6 to 8 percent range experienced during most of the 1960's. The risk, however, is that the saving rate will continue in its lower band. Many studies of the interest sensitivity of personal saving have failed to uncover consistent and significant positive results, and the absolute levels of current real, after-tax saving returns and borrowing costs do not appear high.

Changes in consumer balance sheets will influence the cyclical behavior of the saving rate. Recent large gains in consumer wealth should keep the rate at the low end of its expected range over the near term. But as the recovery proceeds and monetary conditions tighten, consumer balance sheets and wealth should begin to weaken and the saving rate is likely to rise. I project a personal saving rate of about 5 percent in 1983 and 5 to 5.5 percent in 1984. However, a rise in the saving rate in the second year of an economic recovery is unusual. If it fails to materialize, the pressures from the budget deficit on interest rates would be even greater.

Unusual Causes of a Normal Capital-Spending Recovery

The relatively strong performance of business investment in plant and equipment during the second half of the 1970's was followed by a less-than-expected decline during the 1981-1982 recession. Business investment, after adjustment for inflation, fell 6.4 percent between the late 1981 peak and the recent level. Meanwhile, leading indicators of near-term capital spending have been rising, thus signaling an upturn. A 6.4 percent peak-to-trough reduction in real business investment ranks as an average recessionary decline in the face of capacity-utilization rates and business balance-sheet conditions that deteriorated drastically in the last recession.

Three structural factors accounted for the relatively strong business investment of the past six years. The composition of the U.S. economy's output changed more rapidly in the second half of the 1970's than in the previous 15 years—particularly because of an acceleration in the shift toward finance, insurance, real estate, and business services and away from government-related activities.[4]

Moreover, the change in the geographic distribution of the U.S. population also accelerated during the second half of the 1970's. Finally, we have been observing for some time that the high-technology categories of office equipment, instruments and photographic and communications equipment have accounted for a rising portion of all business capital-equipment expenditures (47 percent most recently).

We estimate that rates of return on capital for nonfinancial corporations have been rising since the mid-1970's and are generally keeping up with the increasing cost of debt and equity capital.

Rising internal cash flow from depreciation charges has also helped to insulate business investment from the effects of high external financing costs. In the fourth quarter of 1982, depreciation write offs accounted for approximately 85 percent of nonfinancial corporations' total fixed investment.

For economic recoveries since 1950, the average increase in real business-investment spending, measured from its cyclical trough to four quarters later, was 5.6 percent—followed by another 8 percent rise during the next four quarters. My 1983 and 1984 business-investment forecasts include a trough in mid-1983, followed by a subsequent recovery close to this average cyclical path.

[4]For further details, see *The Pocket Chartroom*, Goldman Sachs Economic Research, New York, February, 1983.

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